Arris and Gale Lectures

ON THE

RELATION OF EXPERIMENTAL PHYSIOLOGY TO PRACTICAL MEDICINE.

Delivered at the Royal College of Surgeons, June, 1882,

BY G. F. YEO, F.R.C.S.,

PROFESSOR OF PHYSIOLOGY IN KING'S COLLEGE.

LECTURE II.—PART I.

THE GROWTH OF PHYSIOLOGY.

MR. VICE-PRESIDENT AND GENTLEMEN,—Our present standpoint differs so very essentially from that of the olden time, that it is difficult to know where to take up the thread of physiological knowledge. Although Hippocrates had a fair idea of the structure and uses of the body, the physiology in his works is so crude that it can hardly be said to form the basis of what we include under that term nowadays. In the works of Galen we find the first definite description of systematic experimentation, and to him we may also attribute the first conception of a distinct physiological science. It is necessary to examine Galen's physiology somewhat in detail, not only because it is the earliest we know of, but also because it proved so very long-lived, not having been changed in any very material way for some 1400 years. So voluminous are his works, however, that time only permits me to refer to them upon the more important divisions of our subject, which I hope then to follow towards their modern standpoint. He had a good grasp of the coarser anatomy of the vertebrate body, chiefly acquired by dissecting domestic animals and apes. He observed Nature accurately and questioned her closely by repeated vivisections and other experiments. The ideas he had of digestion were simple. The stomach was the organ in which the concoction of the food took place. Here the nutrient material was delayed for some time, so as to complete its preparation. The concocted aliment was then allowed to pass into the intestines, in order that it might be distributed to all the minute tributaries of the vena portæ. The yellow bile, which was supposed to get rid of mucosities and excite the movement of the intestine, was poured into that part where active motion was required for the onward movement of the aliments. But the bile did not reach the stomach, where delay was demanded to allow of the adequate concoction of the food-stuffs. The pancreas attracted but little notice from Galen or any of the older anatomists; no fluid being found in its ducts, it was not believed to be a gland, but was thought to act as a soft bolster or pad, which protected the neighbouring important viscera from injury. From the small intestines, the prepared nutrient materials were collected by the tributaries of the portal vein, and thence carried to the liver. They then percolated slowly through the dense parenchyma of that organ. The liver received the newly absorbed aliments, and turned them into blood. It was therefore the chief or only seat of sanguification. It also was the origin from which the great veins arose. From it the great venous trunks bore the newly made blood throughout the body, and distributed it to the tissues. The substance of the liver was kept warm by the hepatic artery, which supplied it with such an amount of heat as to enable it to be most useful to the stomach, which it surrounded with its lobes, and thoroughly heated, so as to promote the concoction of the food. The kidneys were placed near the liver, in order that the large veins, going direct from it to the kidneys, might more readily carry off the surplus water coming to it with the nutriment. The renal veins were thus supposed to be as it were the overflow-pipes of the liver. Concerning the use of the kidneys themselves we hear very little.

Under the heading of respiration the great thoracic viscera, the heart as well as the lungs, are described by Galen. The heart being the focus and source of the vital spirits and the innate heat which vivified the animal, all its parts are deemed to be of the greatest importance, and every one of them is said to be necessary to keep the animal alive. The right side of the heart is devoted to the nutrition of the lungs. Some of the fresh blood on its way from the liver towards the superior vena cava flows through the auricle to the right ventricle, whence it passes to the vessel of the lungs—namely, the pulmonary artery. Galen well knew the difference between the structure of the pulmonary artery and the ordinary venous trunks, the former having two coats like a systemic artery, while the latter have only one. He explained this great anatomical difficulty to his theories of the functions of the pulmonary artery in the following ingenious manner. The general textures of the body require for their nutrition the thicker parts of the blood, and the thin wall of the veins is well suited to let them escape for their nutrition. The lungs, on the other hand, only require for their nutrition the thin part of the blood, which can easily escape through the thicker walls of the pulmonary artery. The thickness of the wall of this vessel, as well as the valves at its origin, have the further function of preventing the air or "pneuma" from mingling with the nutrient blood and check any tendency of regurgitation which might follow the thoracic movement. In fact, the vessel which has to carry blood through the organ impregnated with the "pneuma" must have the same construction as the vessels which carry the vital spirit throughout the body generally.

Galen supposed that the respiratory movements pump the air into the left auricle which receives the contents of the pulmonary veins. These vessels are thin and suitable for taking up the spirits from the pneumatic cavity. The "pneuma" passes through the left auriculo-ventricular opening to the left ventricle, which leads it into the aorta. By means of the motions of this great vessel the warm invigorating vital spirit is distributed to the body. The action of the great vessels is aided by the motions of the thoracic wall which tend both to fill the ventricle and drive on the air through the arteries. But Galen did not agree with those who believe that the arteries contained only air. This discovery of his was founded on vivisections, and was one of the most important he made. "If one cut many arteries at the same time," he says, "they will all let blood escape. This is a fact known to all the world, so that those who say with Erasistratus that the arteries contain absolutely no blood cannot even know that in many places the arteries anastomose with the veins." Thus the blood flowing from the liver by the motions of the veins was distally brought into contact with the air distributed from the left ventricle by the arteries. From another part of his writings it would appear that he believed the blood passed from the arteries to the veins during the systole, and from the veins to the arteries during the diastole. The spleen, according to Galen, has the function of purifying the blood generally, by extracting from it the black bile and other impurities or residues introduced by the food. It also nourishes the intestines, and warms them by means of the active motions of the air contained in its arteries. He performed numerous experiments on the nervous centres, by which he showed the folly of the older view that the meninges were the more important parts within the cranium, injury of which caused paralysis. He gave public demonstrations of experimental researches on the spinal cord. He used for these vivisections young pigs, in order not to shock the audience, instead of monkeys, which he thought would have been preferable on account of their closer analogy to man. He showed that section of the cord in different parts of the cervical region was followed by different results to the respiratory and other movements. He demonstrated the difference of partial and complete transverse section of the spinal marrow, and also the effect of median longitudinal section. When one reads of these investigations, it is difficult to understand that nearly 1700 years could pass over without any great step in advance being made in nervous physiology; but during this period no experiments were made in this direction. Galen describes four cardinal juices, each having a different origin and use. The first is mucus, which he supposed came from the brain, being more plentiful in the winter and in old people; the second is the blood, which is most abundant in the spring and youth, and may be traced to the liver; the third is the yellow bile, occurring in summer, and is traced to the liver; and the last is the black bile, the refuse material eliminated by the spleen, and especially abundant in the autumn and in old people.

Notwithstanding the wide field for research left open by

Galen's attempt to explain the uses of the different parts of the body, advance in this branch of knowledge took place very slowly. Nothing of fundamental importance was added to his idea of the circulation for some 1400 years. Early in the 16th century a number of remarkable men appeared. Foremost among these was a Spaniard, Servetus, who gave a more accurate description of the course of the blood through the heart than had appeared up to that time. He says: "In order to understand how the blood is really life itself—*quomodo sanguis sit ipsissima vita*—one must first know that the spirit comes from the air which is inspired and insinuates itself into the blood, and thence passes into the left ventricle, &c. This communication is not made through the septum which separates the ventricles, as is commonly thought, but the blood is carried by an unknown plan from the right ventricle to the lungs by the arterial vein, and thence by the venous artery; the air gets into the vessels and mixes itself with the blood; the latter in its turn gets rid of its baser humours in this part. The blood thus mingled with air is attracted by the left ventricle, which dilates to receive it more easily." He further pointed out the improbability of so large a vessel as the pulmonary artery being required merely to nourish the lungs in the adult, while in the fœtus they are well nourished although little or no blood goes through this vessel. This learned physicist, mathematician, anatomist and physiologist, unfortunately for himself and for science, commenced his career as a theologian, and on this account fell a victim, at his very prime, to the fanatical zeal of religious bigotry. Expelled from Spain by the Inquisition for his monotheistic views, he took refuge in France. Having incurred the personal enmity of Calvin, the latter denounced him to his protector, a bishop of the Church of Rome, and had him cast into prison. He, however, escaped, and, little suspecting who was his worst enemy, went to Geneva. Here he was at once seized by the great reformer. He was condemned to death for blasphemy in having expressed opinions as to the physical impossibility of the doctrine of the Trinity, and was burned alive, in his forty-fourth year, on October 27th, 1553.

The accurate description given of the anatomy of the heart and vessels by the great Belgian anatomist Vesalius, introduced a new era into the question of the circulation.

Columbus soon after gives a good account of the flow of the blood through the heart and lungs, but fails to recognise the general circulation or the great motor power of the ventricles. He adhered to the view that the respiratory movement forced the blood and air through the arteries. He thought the vena portæ carried the blood to the abdominal viscera to nourish the stomach and intestines, and to the spleen to carry from the liver the blood containing the black bile. He believed the portal vessel had also the important function of carrying the chyle to the liver from the intestines.

Also of the Italian school was Cesalpini, who denied the passage of air with the blood into the ventricle. He called attention more definitely to the fact, long before known from venesection, and mentioned by Vesalius, that the veins when emptied by pressure were filled from the distal side. He described more clearly than Columbus the exact mode of entrance and exit of the blood to and from the heart, and had a better knowledge of the pulmonary circulation. He also fully described the anastomoses between the arteries and veins, which, however, had been clearly referred to by Servetus and others; but he completely failed to recognise the true course of the blood in the portal system. He believed that the spleen, the mesentery, and the stomach received their blood-supply by the branches of the vena porta, mistaking the real course of the current in this vessel quite as fully as any of his predecessors, from whose works he gained most of his knowledge, but to whom he gave no reference or credit. At the beginning of the seventeenth century the (1) great motor power of the heart, (2) the direction and constancy of the flow of blood through the systemic vessels, were unknown; and (3) the portal circulation was a complete mystery.

It remained for an Englishman, whom I shall but briefly name, since you are all familiar with his works, to make the whole matter clear. There are but few who deny to William Harvey the distinction of having first completely grasped and fully described the action of the heart and the course of the blood, through a circle one-half of which lay in the lungs and the other in the general system. The difficulty he had in persuading his contemporary, the great anatomist Riolan and others of the truth of his view of the motion of the blood in the portal vein is, to my mind, a sufficiently clear proof to silence all doubts on the subject of priority in the matter. We need not be surprised to find Italians trying to claim for their countrymen Columbus and Cesalpini the great renown which attaches to this the greatest of all physiological discoveries. But I confess I am surprised to find Englishmen of any class denying that Harvey did more than think out the observations of others, or in any way detracting from the originality of his inimitable work. Yet there are persons among a certain class, which claims to include many medical men, who boldly assert that Harvey did *not* arrive at his conclusion by his own experimental methods, but learned all he professed from his Italian masters—in short, they attempt to argue that original vivisections did not aid him in the discovery. A very superficial glance at his works suffices to settle this point. The headings of the second, third, and fourth chapters of his "De Motu Cordis" are translated as follow by Dr. Willis:—(2) Of the Motions of the Heart as seen in the Dissection of Living Animals; (3) Of the Motions of Arteries as seen in the Dissection of Living Animals; (4) Of the Motion of the Heart and its Auricles as seen in the Bodies of Living Animals. In explaining his motives for writing, he says: "When first I gave my mind to vivisections, as a means of discovering the motions and uses of the heart, and sought to discover these from actual inspection, and not from the writings of others." "At length, and by using greater and daily diligence, having frequent recourse to vivisections, employing a variety of animals for the purpose, and collecting numerous observations, &c." The first lines of the second chapter run thus:—"In the first place, then, when the chest of a living animal is laid open and the capsule that immediately surrounds the heart is slit up and removed, the organ is seen now to move, now to be at rest; there is a time when it moves and a time when it is motionless. ..... These things are more obvious in the colder animals, such as toads, frogs, serpents, small fishes, crabs, shrimps, snails, and shell-fish. They also become more distinct in warm-blooded animals, such as the dog and hog, &c." With such simple and clear words as these describing his method, how dare anyone assert that experiment on living animals had no share in the discovery of the circulation of the blood?

But Harvey did not know all the details of the circle through which the blood had to flow. It remained for Malpighi to *see* it in the capillaries. This father of minute anatomy demonstrated the flow of blood from the arteries to the veins through the capillary network of the lung of a frog while the animal still lived, so that the last link in the chain of evidence wanted to complete Harvey's circle was supplied by vivisection. No one set of experiments, no discovery, had so much influence on physiology as that of Harvey; the time of his labours may be regarded as the period of quickening of physiological science.

Connected with the circulation of the blood is the circulation of the chyle and lymph in a distinct set of vessels. Harvey did not quite believe in the existence of these vessels, though they were discovered during his lifetime. He spoke of them with encouraging words, however, and asked the discoverers for further proofs of their constant occurrence. The warm discussion that was going on at the time about the mesenteric veins—viz., as to whether the absorption of the chyle was their sole function or not—made the discovery of the lacteals all the more striking. As the complete and accurate knowledge of the motions of the blood waited upon the diligent performance of vivisection, so we find that vivisection, and vivisection alone, was the means of discovering the absorbent vessels, both great and small.

The great Italian anatomist, Gaspard Aselli, was the first who gave a definite and systematic account of the lacteal vessels. His own description of how he arrived at his first knowledge of the subject, "more by chance than after reflection," as he says, is so simple and graphic that I cannot do better than give a translation of the words he uses. He was making an experiment on a dog which had recently had a full meal, to show some scientific friends among other things the movements of the diaphragm, when an incident occurred which he thus described: "Having thrown back the intestines and the stomach towards the pelvis, all at once I saw a number of very fine white cords scattered over the whole mesentery, and spreading

over the intestines by means of an infinite number of delicate rootlets. At first thinking them to be nerves I did not pause. But I soon remarked that the nerves of the intestines were quite distinct from these white threads and ran a different course. Being struck with the novelty of this fact, I remained a moment silent thinking to myself of the controversies, no less full of asperity than words, which were kept up by anatomists on the subject of mesenteric veins and their functions. When I came to myself, in order to satisfy myself by an experiment, I pierced one of the largest cords with a sharp scalpel. I hit the right point, and at once observed a white liquid like milk escaping from the severed vessel. At this sight I could not restrain my joy, and, with Archimedes crying 'Eureka!' invited those present to enjoy the spectacle, which was so wonderful and unique that it struck them all with astonishment."

But Aselli held to the old view as to the destination of the chyle, which affirmed that all the nutriment must pass through the liver to be made into blood, and, seeing the lacteals converge to the root of the mesentery, he concluded that they bore the chyle to that organ.

It remained for a Frenchman to trace the chyle through the thoracic duct to the veins. Although the anatomist, Eustachius, described the thoracic duct a hundred years before under the name "vena alba thoracis," its use remained a mystery until revealed by an experimental chance very similar to that just alluded to. Jean Pecquet thus describes his discovery in a MS. quoted by Daremberg. "I had removed the heart of a dog and placed it on the table, and was thinking of nothing but counting the systoles and diastoles which the last efforts of its spirits produced, when I perceived a white substance like milk flowing from the ascending vena cava into the pericardium, at the place where the right auricle of the heart had been. I examined the white substance, and not being able to find an abscess which might, as I thought, have produced it, I opened the veins above and below the heart, and I found that this substance (which had no other taste, smell, colour, or consistence than milk or chyle such as I had seen pressed out of the lacteal veins) came from the subclavian branches, and a little beyond the jugular I found the opening where the liquid entered into the vein. I thought the mesentery might have sent this milk to this part by channels hitherto unknown, and that it was advisable not to neglect the knowledge a divine Providence had given me of a fact so useful to the practice of medicine. I placed my hand on the mesentery of the animal, which was still pretty warm, and whose lacteals were not yet exhausted. I had scarcely pressed when I could see the milk flow from the two sources I had already remarked in the subclavian. .....I continued the search for these vessels in a number of dogs, which I opened for this purpose. I found them all along the dorsal vertebræ lying on the spine below the aorta. They swelled below a ligature, and on relaxing the same I recognised the milk carried to the holes I had observed in the subclavian veins." I need hardly pause to inquire what share experiment had in these discoveries.

Rudbeck, the Swede, discovered the lymphatic vessels in many tissues, and in 1652 he demonstrated the systemic absorbents to the noble and talented Christine, Queen of Sweden.

Time will not permit me even briefly to refer to the numerous experiments on living animals made by Hunter, Hewson, Cruikshank, and Magendie, by means of which we arrived at clear ideas of the mechanism of the absorption of food stuffs from the alimentary tract, and of the irrigation of the textures of the body with nutrient juices from the blood.

The practical gain secured by a knowledge of the wide distribution of the absorbent vessels can hardly be overestimated. Their duty in carrying off waste products is constantly being employed. Their absolute necessity in removing pathological products is invaluable. Now they are made use of as an ordinary means of introducing medicines into the system by the familiar hypodermic injection. If the only result of a knowledge of their existence and powers were the introduction of catgut ligatures which can be absorbed, their discovery may be said to have done as much for surgery as did that of the motor power of the heart. In the case of the absorbents, as in the case of many of the most important discoveries the world has yet seen, the truth was arrived at by accident while another point was being searched after. This fact has been made the subject of an audaciously inaccurate and misleading article in an anti-vivisectionist periodical, in which the author (evidently a person with some medical knowledge) attributes all the honour of the discovery in question to anatomy, and pretends to show how vivisection nearly put the anatomists off the real track. The following is the last passage of the article, which is headed Physiological Fallacies, No. II.:—"Vivisection had accidentally blundered upon an important discovery (Aselli's). Vivisection promptly recovered from its accident, and triumphantly proved the discovery a blunder. And so the 'discoverer' Aselli died—in his ignorance of the true bearing of his discovery. And twenty years later the anatomist Pecquet blew the theories of the vivisectionists to the winds, and freed science for ever from one more set of the 'errors' which experimental physiology had done its best to 'perpetuate.'"

From Pecquet's own words it may be judged how accurate this contrast really is, and what share pure anatomy and experiment respectively had in the discovery of the absorbent vessels.

I may here call attention to an argument made use of by some writers on the subject of experimental research as evidence against the propriety of vivisection. It is that the result expected from any given experiment should be stated beforehand, and should be at least such as would surely compensate for the objections to the undertaking of an experiment on a living animal. This is an important point for us physiologists. We are now prevented by law from doing anything in the way of an experiment on a living animal, even though we hold a licence to experiment under the Prevention of Cruelty to Animals Act, 1876, except it be with the express object, as the Act says, of "new discovery of physiological knowledge, or of knowledge which will be useful for saving or prolonging life, or alleviating suffering." The person who acts as the judge upon the subject is a most skilled lawyer and able politician, but, as far as I know, possesses no special knowledge of physiological science or its methods.

Had Aselli and Pecquet lived under laws such as obtain in England in this decennium of the nineteenth century, they could not have commenced these apparently objectless demonstrations, and we might possibly still be without their fruits. Is there anyone in the world who could dispute the value of such knowledge, or refrain from rejoicing that these demonstrations were undertaken?

ABSTRACTS OF

Lectures

ON

DIGESTION.

Delivered before the Royal Institution of Great Britain,

BY ARTHUR GAMGEE, M.D., F.R.S.,

BRACKENBURY PROFESSOR OF PHYSIOLOGY IN OWENS COLLEGE, MANCHESTER.

LECTURE III.

IN most animals whose saliva has been studied, its action is not amylolytic; in man it has almost no action upon uncooked starch. This necessity for the starch being cooked perhaps explains the lack of activity in the saliva of so many animals.

The food-bolus passes along the œsophagus into the stomach, a saccular dilatation of the alimentary canal, lined with mucous membrane, and having a wall rich in muscular fibres, producing movements by which the food is thoroughly mixed with the gastric juice. This is poured out by a multitude of glands in the mucous membrane, not constantly, as is the case with saliva, but intermittently, according to the presence or absence of food in the stomach. The surface of the stomach is studded with minute depressions, the open mouths of the gastric glands.

Two kinds of gastric glands are distinguished, those which are specially found at the pyloric end, and those which abundantly crowd the greater part of the stomach, the glands of the fundus. The pyloric glands, often called peptic, have a rather wide upper part lined with cylindrical epithelium which secretes mucus, and below this one, two, or more tubes with epithelium, with its cells a little more cubical, but having a markedly different secretion. The

glands of the fundus, also known as the acid-forming glands, have an upper part much like the pyloric glands, and one, two, or more tubes proceeding from it, considerably larger than those of the peptic glands, having central cells very nearly occupying the whole space, leaving only a slight central lumen and border cells, fewer in number and more granular in character. It appears probable that these latter are especially acid-forming cells. These cells undergo important changes during digestion. Heidenhain examined them in an animal killed after being kept without food for some little time, and found the central cells clear, and the border cells small. In cases where the process of digestion had been going on for some hours, the central cells were found larger, and the border cells much larger and less granular. Again, if examined in their condition near the close of digestion, the central cells were smaller and very granular, and so also were the border cells. Mr. Langley, of Cambridge, has supplemented these observations in a very important way by studying the condition of the gland-cells immediately after death, with as little alteration by reagents as possible. The central cells in the resting condition appear granular, while during the process of active digestion the granules have disappeared.

The cells in the deeper portion of the pyloric glands appear to have the same functions as the central cells of the glands of the fundus, being especially pepsin-forming cells. The border cells in the latter glands appear to be the special acid-forming cells. Of various reasons for this conclusion a few may be mentioned. When the pyloric end of the stomach is isolated, the secretion is alkaline; that of the fundus alone is acid. In the frog, when the cells of the gastric glands are almost all like border cells, the secretion is acid all over; but the lower part of the œsophagus possesses glands which form pepsin. In the development of the stomach up to a certain stage no pepsin is formed, and the only cells found are like border cells. At a certain period pepsin is first formed, and then central cells appear.

The gastric juice is very watery and acid, of specific gravity about 1002, containing an unformed ferment and a free acid (hydrochloric acid). Schmidt's analysis of the gastric juice of the dog is as follows:—

Water	973·06
Organic matter (including pepsin)	17·13
Hydrochloric acid (HCl)	3·39
Calcium chloride ($CaCl_2$)	0·26
Sodium chloride (NaCl)	2·50
Potassium chloride (KCl)	1·12
Ammonium chloride (NH_4Cl)	0·47

Pepsin is an unformed ferment which is specially characterised by requiring the presence of a free acid in suitable quantity, acting best with a ·2 per cent. solution of hydrochloric acid. It is not known absolutely pure; the solutions used in artificial digestion contain a large quantity of it, but it has not yet been isolated. Enough is known, however, to prove that it is not itself a proteid. Of the artificial pepsins that are sold, Bullock's, Savory and Moore's, and Benger's may be mentioned as containing pepsin in an active state. Pepsin is essentially a solvent of proteids such as white of egg, fibrin of meat or blood, and this action will not take place if the acid of gastric juice alone is present. There is no doubt that the acid of gastric juice is much more than is sufficient to combine with the bases present, supposing them to be all in a combined state. Richel's analyses give the following results:

	(1)	(2)
Total chlorine in 100 parts	2·568	1·669
Chlorine corresponding to acidity...	1·645	0·923
Chlorine combined with bases ...	0·989	0·837

As to the mode of origination of the free acid, it has been suggested that it results from a decomposition of salts in the blood, like an electrolytic decomposition; but of this there is no evidence. It has been imagined that certain salts existing in the blood might form hydrochloric acid as follows:

$$2Na_2HPO_4 + 3CaCl_2 = Ca_3(PO_4)_2 + 4NaCl + 2HCl,$$

and that hydrochloric acid, being perhaps the most diffusible of all known substances, might simply be filtered from the blood by the acid glands. But this hypothesis is defective, and contrary to all we know of the action of glands. It may perhaps be modified so that we may regard the border cells as specially tending to accumulate certain salts in their contents, which then, by reacting, give rise to the free acid which diffuses out; but the question cannot be regarded as settled.

The proteids are considerably altered physically by gastric juice, though not definitely changed in chemical composition. They are no longer coagulable by heat or by nitric acid, and give a delicate lilac colour with sulphate of copper and caustic soda. They become remarkably diffusible through membranes, and the general term of peptones is given to them.

As to actions in the stomach upon the other constituents of the food, the effect of the salivary ferment seems to cease on its contact with an acid solution. Some of the cane sugar swallowed is, in the stomach, further converted into dextrose and levulose. There is some action on animal fats, for the gastric juice dissolves the walls of the cells in which the fat is contained, and sets it free. Dr. Cash has lately maintained also that there is a slight amount of decomposition of neutral fats in the stomach. Considerable absorption of sugar into the lymphatics and blood likewise occurs at this stage.

One further ferment remains for notice—the milk-curdling ferment. It is distinct from pepsin, for it will act without the presence of a free acid, and it precipitates casein, the principal proteid of milk. This curdling of milk in the stomach is an important preliminary to the digestion of casein, and its conversion into peptones.

RUPTURE OF THE URINARY BLADDER.

BY WALTER RIVINGTON, F.R.C.S. ENG.,
SURGEON TO THE LONDON HOSPITAL.

PART I.

CASES, GENERAL CONSIDERATIONS, AND CAUSES.

(*Concluded from page 983.*)

AFTER all exclusions there remains a small residue of cases for which it is difficult to find an explanation other than the immediate effects of over-distension. Besides Blundell's case, there are two cases of rupture of the bladder in the pregnant female due to the distension caused by retroversion of the gravid uterus, one reported by G. Hunter,[1] and the other by Lynn.[2] Hunter's patient was a female, forty years of age, the mother of four children, and three months pregnant. She became the subject of retroversion of the gravid uterus whilst gleaning wheat, and suffered from consecutive retention of urine. The rupture of the bladder was found near the base. The crevice would admit the end of the finger, and the edges were gangrenous. Nine or ten pints of urine were effused into the abdomen. Lynn's patient was a woman of forty. As a result of retroversion of the gravid uterus she suffered from distension for seven days; then she felt something burst within her, with relief to her previous symptoms. She died on the second day. Nine or ten pints of urine were found in the cavity of the abdomen. There was a rupture at the fundus sufficient to admit the finger, and the edges of the aperture were gangrenous. In these cases the retained urine produced probably a twofold effect, stretching and weakening the coats of the bladder, and perhaps setting up gangrenous inflammation at the site of the rupture. It is possible that the mucous coat gave way first, and that the peritoneal coat withstood the pressure until after the urine had caused gangrene or a sloughy condition of the edges of the opening. The action of the abdominal muscles may have accelerated the ruptures, but the main feature, after all, is over-distension operating over a short period of time, in this respect differing from the cases of chronic obstruction in the urethra from stricture or enlarged prostate which has been seen to produce tunicary hernia of the bladder, and thus to lay the foundation for rupture when complete retention supervenes. Dr. Fix[3] has recorded a case of retention in a female twenty years of age, leading to rupture of the bladder. At the post-mortem ten or twelve pounds of urine were found in the abdomen, and the rupture was "nearly throughout the whole extent of the organ," the tissues being much thinned. Dr. J. B. Wilmot[4] has related a very interesting case. A highly

1 Housl, op. cit.
2 Med. Obs. and Inq., vol. iii.
3 Phil. Med. and Surg. Journ., vol. ix. Stephen Smith, op. cit.
4 Med. Times and Gaz., Nov. 4th, 1854.

nervous and hysterical girl of nineteen was admitted into the Tunbridge Wells Infirmary, after a fortnight's illness under medical care. Her catamenia were passing. She complained of inability to pass her urine, and asked to have it drawn off on the second day after admission, but the house-surgeon declined to interfere unless the retention lasted longer. She had passed some water, and under purgatives a considerable quantity came away with her motions. Pain, thirst, sleeplessness, and incoherence in her talk, the symptoms present on admission, continued. On the fifth and sixth days she passed urine freely, as well as during the succeeding night. On the seventh day there was no water but no distress. Dr. Wilmot was quite free from anxiety about her. Only fourteen hours had passed since she made water, and she had partaken freely of her dinner. An hour later she gave a most piercing shriek, saying she felt a sudden pain in the left pubic region as if a needle had run into her. She became tranquil, but half an hour later was seized with a sudden most acute pain in the epigastric region, and this too subsided. She expired suddenly not long afterwards. At the post-mortem a highly red vascular patch, more than an inch in diameter, was found on the posterior surface of the bladder, and in its centre an opening one-third of an inch long by a quarter of an inch wide through which the urine had escaped. There was no ulceration, but the bladder had not fully contracted, and was so thin and pulpy as to tear here.

This case seems to be as pure a case of rupture from over-distension as is likely to be met with. Over-anxiety not to humour an hysterical girl led, it would seem, to a distended bladder being overlooked, and the distension continued long enough to thin and weaken the vesical tunics, in spite of occasional, but probably only partial, relief to the organ by the overflow of urine.

Another case of rupture which was accounted for by over-distension, the effect of profound alcoholism, has been recorded by Dr. McEwen.[5] A lad of nineteen, addicted to drinking to excess, was taken up in an insensible state and put to bed in a lodging-house. He continued comatose, and no attention was paid to his bladder. On the third day he was drowsy and stupid, drank water, but took no food. On the fourth day he seemed very uneasy, rolled about in his bed, would not answer questions, was pained internally, and lay with his limbs flexed on the abdomen. He was removed to the hospital, and died shortly after admission. The bladder was found contracted and deep in the pelvis, which contained a quantity of straw-coloured fluid. At the junction of the upper and middle thirds posteriorly a little to the left of the middle line there was an aperture through the peritoneal and other layers, sufficiently large to admit the tip of the little finger. There were no indications of disease, no gangrene, no ulceration, no stricture, no obstruction or false passage in the urethra. Dr. McEwen thinks that the bladder ruptured after the patient's admission to the lodging-house, because there were no signs of peritonitis after three days. The reason is not at all conclusive, and the possibility of a previous injury, as indicated by a slight bruise in the epigastric region, diminishes the scientific value of the case. At the same time the nature of the hole in the bladder associates the case rather with the idiopathic than with the traumatic ruptures. In the idiopathic cases the aperture is small, often circular, or triquetrous, but in the traumatic cases it is generally a rent from an inch to two or more inches long. This corresponds with the results of experiments on the dead body. M. Houel conducted four experiments with Charrière's force-pump. When the pressure marked on a manometer equalled one atmosphere, the mucous coat appeared to give way, followed by a separation of the muscular fibres. The seat of the rupture was uncertain. In one experiment made by myself with hydrostatic pressure, I found that the mucous membrane yielded in the first place to the left of the apex admitting the fluid beneath the serous coat, which subsequently gave way when the pressure was continued. The aperture was small. Mr. Henry Arnott's case of rupture following stricture appears to me to bear considerable resemblance to the experimental effects of over-distension of the bladder. On the other hand, in two experiments, which I made on distended bladders by the administration of a forcible blow with the fist on the anterior aspect of the abdominal wall, in the hypogastric region, the bladder gave way posteriorly, the rent running through all the coats in a more or less vertical direction. Now, the posterior aspect of the bladder is the most common site, and the more or less vertical direction is the most common disposition of the simple intra-peritoneal rupture resulting from injuries. Thus out of sixty-eight cases in which the size and position of the aperture are noted, thirty-one presented the rent on the posterior aspect of the bladder, seventeen posteriorly and superiorly, thirteen at the superior fundus, three superiorly and anteriorly, and four on the anterior aspect of the superior fundus. In brief, the ordinary site of the intra-peritoneal rupture in the distended bladder is between the urachus and a point three or four inches below it. In six of the 105 cases the rent was transverse; one of these was a female. In about an equal number the rent is described as vertical and oblique. In many the direction of the rupture is not mentioned, but I think it may be fairly inferred that the rupture was vertical, or nearly so, in the great majority.

The question has been asked why the bladder ruptures so frequently on the posterior surface, and no satisfactory answer, so far as I know, has been elicited. Dr. Harrison ascribed the circumstance to pressure against the promontory of the sacrum, but, as Dr. Stephen Smith has remarked, the rent in the distended state of the bladder is usually well above the level of the promontory. Mr. Hilton, who had seen several cases, threw out the suggestion that the bladder was easily ruptured posteriorly because of the longitudinal fibres at the posterior aspect, a by no means satisfactory explanation. There appear to me to be two chief factors in the determination of the site of rupture of the bladder in any given case of injury. One factor is the situation of the weakest part of the parietes of the organ, and the other the nature of the violence applied, acting in accordance with the physical principles of the resolution of forces. Weakness of the bladder at any one spot, and the spot will vary in different bladders, comes into play as has been seen in cases of chronic obstruction to the outflow of the urine, leading to thinning of the coats and tunicary hernia. But this factor scarcely operates to the full extent where the violence is applied suddenly and extremely to a healthy bladder, and we must look to the site and mode of application of the force. The force is applied usually to the anterior aspect of the hypogastrium. When the bladder is distended its lower half occupies and pretty accurately fits into the cavity of the pelvis, being well supported on all sides by the walls of the pelvis. The upper half is situated above the brim of the pelvis. The anterior surface, to which the force is applied, is supported by the pressure of the abdominal muscles; the posterior, superior, and lateral aspects are in contact with the intestines, and are less protected than any other parts. It is on the posterior surface that the stress of the violence applied anteriorly falls, being conveyed through the fluid contents of the bladder. If a fair straightforward equable blow is administered in the middle line to the hypogastrium over a distended bladder, or uniform force be conveyed through the sudden contraction of the abdominal muscles, the rupture may be expected to be a vertical rent on the posterior surface, as I found it to be in the two experiments which I made on the dead body. In M. Assmuth's two cases of rupture from lifting heavy weights, in Fergusson's and Spence's cases of falls on the back of the head, in my own case of the stout patient who fell flat on to his abdomen, in Mr. Poland's[6] case of a stout man who fell on his abdomen on a heap of stones, in Platerus'[7] case of an adult male who fell upon the ground and struck his abdomen, and in sundry other cases of blows or kicks, the rent was on the posterior aspect, and, where noted, was vertical. If the force be less regular, as for example in running against the corner of a table or bench, or falling on the edge of a tub, or if a wheel pass over the abdomen, the rent may be at the opposite side of the bladder, or oblique, or even transverse, or in some cases be situated anteriorly. One case of transverse rupture into the peritoneal cavity was caused by a horse falling on his rider after conviviality,[8] and another by a kick in the hypogastrium.[9] A third instance, recorded by Professor R. W. Smith,[10] was in a female who fell across the edge of a tub, and doubtless the transverse edge of the fundus of the uterus *vis-à-vis* with the edge of the tub may have exercised some influence. In like manner a transverse rent on the anterior wall was produced in the case of a

[5] THE LANCET, Sept. 27th, 1873, p. 448.

[6] THE LANCET, April 4th, 1863. [7] Stephen Smith, op. cit.
[8] Medical Times and Gazette, Feb. 20th, 1869. Mr. Wathen's case.
[9] Harrison, op. cit.
[10] THE LANCET, 1844, vol. 1., p. 102. Compare also Wiesbach's case, No. 100, in Max Bartels' paper.

woman of intemperate habits, under Mr. M. Collis,[11] through falling across a footboard.

Two cases have been related in which the violence was applied to the back. In a case under Mr. Hawkins,[12] a piece of timber fell on the patient's back. The stress of the violence expended itself anteriorly, and the bladder was found ruptured in front, just below the reflexion of the peritoneum. In the second or Watson's[13] case, the patient was caught in a steam-engine, and received a severe blow on the back, causing injury to the pelvic bones and articulations. A transverse rupture admitting three fingers was produced at the fundus. This case appears to me to illustrate the principle that when the fluid in the bladder is forced, as it were, towards the apex, as, for example, by the pressure of a large surface or by concussion (?), the rupture will be found at the superior aspect. This was the situation in several cases of horses and antagonists falling on the abdomen, and in the case of a man who fell from a height on to the soles of his feet. When the violence, instead of at once rupturing the bladder through the medium of the fluid, presses it forcibly backwards, a rent will be found anteriorly just above the prostate gland. On an empty bladder the pressure may act through the peritoneum, urachus, obliterated hypogastric arteries and pelvic fascia. Very likely strong traction on the bladder from above in this manner tears through the attachment of the anterior true ligaments to the viscus, and thus determines rupture just above the gland. Instances of rupture in this situation have been adduced.

These cases and remarks will suffice to illustrate the views here put forward for the first time—views which, *mutatis mutandis*, receive some corroboration from the effects witnessed in injuries to the head. The force of a blow on the head extends itself on the brain, not merely at the seat of injury, but at a point directly opposite. In a fall on the occiput the anterior lobes of the brain will be found bruised as well as the posterior. The brain seems to be driven forwards against the frontal bones. A blow administered to a distended bladder in front drives the fluid forcibly against the posterior wall, which is burst open by the expanding force. The aperture thus produced is not a clean cut wound like one made with a sharp knife, but it is generally an irregular jagged rent with contused edges. Blood is often poured out freely, and submucous extravasation may be found either confined to the neighbourhood of the rent, or spread over a wider area.

In the second part of this paper I propose to deal with the symptoms, diagnosis, and treatment of the lesion, and to review the reported cases of recovery in the light of the information derived from the study of the cases which had a fatal termination.

ON THE PHYSIOLOGICAL ACTIVITY OF SUPEROXIDISED MOLECULES,

ESPECIALLY OF THOSE OF QUININE IODATE AND BROMATE.[1]

BY CHARLES A. CAMERON, M.D.,
FELLOW AND PROFESSOR OF CHEMISTRY AND HYGIENE, R.C.S.I.

THE author has experimented with the bromates and iodates, and has come to the conclusion that they are more active physiological agents than the corresponding iodides and bromides. The researches of Gamgee, Priestley, Larmuth, and others have shown that unsaturated molecules have a higher physiological potency than saturated molecules, especially those containing the same kind of atoms. Carbon monoxide is more poisonous than carbon dioxide; the former has but two of the four bonds of its carbon atom satisfied, whilst in carbon dioxide the four bonds of the carbon atom are saturated by the four bonds of the two oxygen atoms. The pyrophosphates and metaphosphates have unsaturated nuclei and are poisonous, whilst other phosphates, which are saturated compounds, are nearly inert provided their bases are so. The author could not accept as established Rabuteau's theory, that the physiological activity of the elements was proportional to atomic weight. Lithium, with an atomic weight of 7, is more active than sodium with an atomic weight of 23. Chlorine is more active than iodine in its free state, though many of the iodine compounds exceed in potency the corresponding chlorine compounds; arsenic is more poisonous than antimony. Still, as a rule, the poisonous elements have high atomic weights. The theory that the more complex a molecule the greater its physiological activity is sustained by many facts. The higher terms of the alcohol series are more powerful in their effects upon the animal organism than the lower. Amyl alcohol molecule contains eighteen atoms, and the poisonous dose of this alcohol is only one-eighth that of ethyl alcohol, which has a molecule composed of nine atoms. Oxalic acid is, however, poisonous, whilst malic acid, with a much higher molecular weight, is not poisonous. Albumin has an extremely high molecular weight. The alkaloids have high molecular weights, but they are composed of unsaturated molecules.

The author considered that the high physiological activity of the bromates and iodates might be due to the superoxidised condition of their molecules. The term superoxidation is no doubt open to objection; but there is no better one to explain the condition of molecules, containing more oxygen atoms than are necessary to saturate the bonds of the other atoms present in them. In potassium iodide we have a salt composed of two monad elements—K—I, and therefore according to the doctrine of atomicity it is a saturated compound. When four atoms of oxygen are added to K—I we have six oxygen bonds in excess of the number requisite to saturate the iodine and potassium. The molecule of potassium periodate will, therefore, be constituted as follows:— $\begin{matrix} K-O-O \\ | \\ I-O-O \end{matrix}$. Two of the oxygen atoms are, therefore, loosely combined, being merely in union with other oxygen atoms. In iodic anhydride we have three oxygen atoms similarly placed:— $\begin{matrix} I-O-O \\ I-O-O \end{matrix} \rbrace O$. Lastly, we have in periodic anhydride no fewer than five atoms of oxygen not in direct connexion with the iodine:— $\begin{matrix} I-O-O-O \\ I-O-O-O \end{matrix} \rbrace O$. It is improbable that bodies constituted in this way would be physiologically inactive. In reality they may in a certain sense be regarded as unsaturated rather than supersaturated molecules. They contain oxygen atoms unsaturated just as much as the carbon atom is unsaturated in carbon dioxide. The bromates and iodates contain large quantities of oxygen in a condition in which it is likely to act chemically upon the blood. Iodates and bromates may, after administration, be detected in the urine; but that does not clearly prove that they have existed as bromates and iodates during the whole period of their sojourn in the system. In 1869 the author introduced ferric iodate as a substitute for the unstable ferrous iodide in medicine, and the salt was largely employed, and with benefit. More than a year ago he introduced two new compounds—namely, iodate of quinine and bromate of quinine. They have been so largely prescribed in Dublin that one firm alone, Messrs. Graham and Co., have sold more than a cwt. of the iodate in the form of a granulated effervescing compound, each drachm of which contains two grains of iodate of quinine (a dose). The iodate has been found a valuable remedy in sciatica, severe articular pain which had resisted the action of the drugs which generally afford relief in rheumatic and gouty affections, malarious enlargement of the spleen, sluggish forms of pulmonary congestion, and in secondary syphilitic disease.

Iodate of quinine is prepared by neutralising freshly precipitated quinine hydrate, with a solution of iodic acid in eight parts of water. The temperature may be raised to 100° F. Dried at a temperature of 100°, it loses no further water by being kept in vacuo over sulphuric acid. It therefore, prepared in this way, contains no water combined. The mean of several analyses showed that it contained 22 per cent. of iodine; it is therefore composed of a molecule of iodic acid and one of quinine: $C_{20}H_{24}O_2N_2HIO_3$. The theoretical proportion of iodine would be 22·92 per cent.; but the salt was faintly alkaline, showing that there was a trace of free quinine. The iodate dissolves in 700 parts of water, and is freely soluble in spirit of wine, less so in ether and alcohol. Hydrochloric, acetic, and most other acids dissolve it, forming colourless solutions. If strong sulphuric acid be allowed to drop on quinine bromate, a detonation occurs, a puff of

[11] Dublin Quarterly Journal, vol. xlvii., 1869.
[12] Mr. Prescott Hewett's series, op. cit.
[13] Mon. Journ. Med. Sci., Dec. 1848. Stephen Smith, op. cit.
[1] Abstract of a paper read before the Medical Society of the College of Physicians, Dublin, May 3rd, 1882.

black smoke is given off, and the compound is completely decomposed. On quinine iodate the strongest sulphuric acid produces merely a change from a white to a very light yellow colour; and the addition of water forms a colourless solution. At 100° Centigrade, quinine iodate undergoes slight decomposition.

A brief reference to an iodate of quinine is made by Serullas, but of bromate of quinine no account could be found in the books or journal. It may be prepared by precipitating barium bromate by sulphate of quinine, and evaporating the solution separated from the barium sulphate, also by neutralising bromic acid solution with quinine. It occurs in silky minute needles, very soluble in water, spirit of wine, and dilute acids, except nitric acid. It is fully as active in its physiological effects as the iodate. It may be prescribed as a mixture, in pills, or in the granular effervescing mixture of the Pharmacopœia. It is soluble in 250 parts of water. Soon after the administration of the iodate of quinine, iodic and hydriodic acids appear in the urine. The quinine also appears, but arrives somewhat later.

DORSAL DISLOCATION OF THE LEFT HIP (FOUR MONTHS); REDUCTION BY MANIPULATION.

BY THOMAS JONES, F.R.C.S.,
SURGEON TO THE MANCHESTER ROYAL INFIRMARY.

INSTANCES of the successful replacement of the head of the femur after its sojourn for several months on the dorsum ilii are sufficiently rare to justify the narration of a case. Although Sir A. Cooper's dictum (which in the case of the hip fixes the period at two months, beyond which attempts at reduction are impracticable) is generally adhered to, still examples are not wanting in which reduction has been effected after the lapse of a much longer period. Thus, Bigelow cites cases where reduction was accomplished six and eight months after the accident. It is true the difficulties inseparably associated with the efforts to reduce old dislocations are very great and often insurmountable, and the attendant risks always considerable, yet the attempt is rendered necessary because the utility of a limb is seriously impaired by the presence of the unreduced bone. In the case which is narrated below the restoration of function after the replacement of the femur was fairly good. This shows that a complete separation of the joint surfaces for many weeks is not necessarily followed by much structural change. The free mobility of the head made it tolerably certain that the ligamentum teres was severed, and the capsule freely torn—an amount of destruction of soft parts which we should expect to be followed by, at any rate, some deformity of the head. The ease with which the head regained the acetabulum was a source of surprise and satisfaction. The movements presently to be mentioned sufficed to bring the displaced bone into its natural situation, and this occurred without the employment of any force. When the limb was flexed at the knee, and rotated inwards, the head readily escaped from the acetabulum, but was again replaced by movements similar to those employed in the first instance. This ready escape of the head may be taken as an indication of, possibly, two conditions: the free severance of soft structures, and the partial obliteration of the cup-shaped acetabulum. That this latter condition really existed is highly probable, and is rendered almost certain by the lengthening of the limb, which was found after the reduction. It is important to note the position of the patient immediately before the accident. He tells us he was stooping; that his legs were apart (in a position, then, of abduction of the limbs, and flexion of the trunk on the thighs), and that while in this state he received the blow which occasioned the dislocation. This will tend to confirm Mr. Morris's observation respecting the mode in which dorsal dislocations are produced. The history of the case may now be related:—

Wm. H——, aged twenty-four, was admitted an in-patient of the Infirmary on the 27th January, 1882, and furnished the following history. On the 8th of October, 1881, he was playing at football, and whilst stooping with his legs apart he received from behind a severe push which threw him to the ground. On attempting to stand the left leg was discovered to be very much inverted, and a total inability to walk immediately followed. An irregular practitioner in the shape of a "horse doctor" manipulated the injured limb, and informed the patient that the dislocation had been reduced.

Condition on admission.—The left lower extremity is strongly inverted and shortened to the extent of two inches. It permits of rotation inwards, and inversion; but rotation outwards and eversion are impossible. The trochanter major is very prominent and nearer to the anterior superior spine of ilium than that on the other side. The head is easily discovered on the dorsum ilii, where it is very superficial and freely movable. Syme's distinctive sign of dorsal dislocation is absent, for the thigh can be made to touch the bed without any arching of the back.

Jan. 30th.—The patient was anæsthetised, and the head of the femur returned into the acetabulum by the following movements. The ankle of the dislocated limb was grasped with the right hand, while the left rested on the knee. Then the thigh was flexed upon the abdomen, and the limb rotated inwards to a slight degree. This was done with the object of more effectually disentangling the head. Immediately afterwards the limb was abducted, rotated outwards and extended, when the head regained the acetabulum with a sound which was audible to the students present. It was now discovered that the inversion and the other symptoms had completely disappeared, and that a quarter of an inch lengthening was substituted for the previous shortening. Redisplacement could be readily made by flexing the limb and rotating it inwards. To remove any chance of the dislocation recurring a Liston's splint was applied.

Feb. 6th.—Splint temporarily removed; a certain amount of motion in the hip-joint discovered; splint reapplied.—14th: Felt moulded to the hip, and the limb encased in a plaster-of-Paris bandage carried upwards from the foot. Hip-joint made secure by a pelvic spica.—16th: Patient discharged.

April 11th.—Readmission. Plaster bandage taken off. Hip and knee-joints found to be stiff. Leg lengthened and somewhat abducted.—14th: Patient again placed under the influence of chloroform with the view of breaking down adhesions. The different movements naturally enjoyed by the hip can be performed by the expenditure of some degree of force. Both the hip and knee to be freely rubbed with soap liniment and passive movements to be employed twice a day. By these means motion in the hip-joint was still further improved, so that by the time the patient was finally discharged, on April 18th, the usefulness of the limb was almost completely restored, and very little inconvenience in walking experienced.

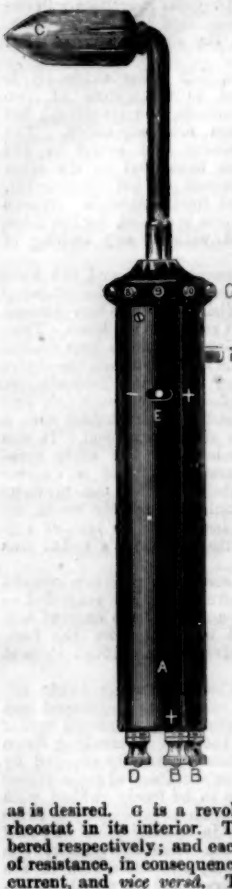
A NEW MEDICAL ELECTRODE.

BY A. HUGHES BENNETT, M.D.,
PHYSICIAN TO THE HOSPITAL FOR EPILEPSY AND PARALYSIS, REGENT'S PARK, AND ASSISTANT-PHYSICIAN TO THE WESTMINSTER HOSPITAL.

IN the scientific employment of electricity in medicine, and more especially for the purposes of electro-diagnosis, in addition to the currents from different batteries, certain accessories are essential. There must be: 1st. An electrode of suitable size and shape. 2nd. A method of graduating the strength of the current, by means of which the feeblest or the most powerful efforts of the battery may be obtained, or any intermediate grade that may be desired; this, moreover, must be effected gradually so as to avoid unnecessary sudden changes or shock. 3rd. A means of opening and closing or of interrupting the current. 4th. A mode of alternating or reversing the direction of the current.

Many of the batteries supplied for medical purposes do not possess all these accessories, which are absolutely essential for scientific investigation. Even those which supply these necessaries are open to the objection that in delicate diagnostic investigations the attention of the observer is divided between the electrode with which he makes his experiments on the patient and the element-board upon

which are placed the different apparatus he has to manipulate. To those practically experienced in electro-diagnostic researches this has always been found to be a serious drawback to the facility and success of their conclusions. In the endeavour to in some measure obviate these difficulties the instrument has been constructed of which the accompanying woodcut (half size) indicates the chief features. It consists of an electrode of convenient shape and size, and contains in its interior all the essential accessories above enumerated. A is the handle. B B are two connecting screws, to which are attached the positive and negative poles of the battery. C is a metal or carbon point, covered with wash-leather; in the figure this is of a convenient shape for electro-diagnostic purposes, by which either a very fine point or a considerable surface can be applied to the skin; it may be unscrewed, and other heads of different shapes and sizes fixed on as necessity may require. D is a binding screw for the other electrode, which is applied to the patient in order to complete the circuit. E is a lever for alternating the current. When moved towards + the point C is the positive, and when towards – it is the negative, pole. F is a peg which when pressed down closes, and when it moves back by means of a spring breaks the circuit; the current can thereby be interrupted as slowly or as quickly, up to a certain point, as is desired. G is a revolving wheel in connexion with a rheostat in its interior. This consists of ten sections, numbered respectively; and each of these, by throwing in a unit of resistance, in consequence diminishes the strength of the current, and *vice versâ*. This rheostat does not profess to be an exact or measurable amount of resistance, but is simply a means of gradually increasing or diminishing the strength of the current for practical purposes. It has been so arranged that its power is convenient for clinical use. For example, when the instrument is attached to the full power of a forty-cell Leclanché battery, and the entire resistance is introduced into the circuit, a minimum amount of sensation is perceptible to the skin. As each division of the wheel is turned a tenth of the whole resistance is taken from the circuit, and consequently the current increases in strength, till when it reaches the last section, where there is no resistance, the full power of the forty cells is obtained. More correctly estimated by a galvanometer, the properties of this rheostat may be thus stated: Supposing the current from the forty cells passing through the human body to indicate 12 m.v., one unit of resistance of the rheostat introduced into the circuit reduces the reading to 11 m.v., and so on, till when the whole resistance is included 2 m.v. is the result.



This electrode therefore contains in itself all the essential elements for medical electrical appliances, and more especially for the purposes of electro-diagnosis. It may be attached to either the faradaic or galvanic currents. When in the hand of the observer, all the accessories can be put in action by the movement of one finger, thus greatly facilitating the delicate manipulations of the investigator, and obviating the necessity of dividing his attention and altering his position, as he is compelled to do when working with an element-board. Finally, with this instrument, which can be carried in the pocket, the physician, provided he obtains a sufficiently powerful current, is independent of the imperfect construction of most of the apparatus now supplied to the profession, as all the necessary accessories he requires are contained in his electrode. The instrument has been manufactured by Mr. Hawkeley, Oxford-street.

Old Cavendish-street, W.

A CLINICAL STUDY OF THE

SMALL GRANULAR CELLS OF THE BLOOD.

BY JAMES T. R. DAVISON, M.D. EDIN.,

LATE RESIDENT PHYSICIAN TO THE ROYAL INFIRMARY, EDINBURGH; HOUSE-SURGEON TO THE ROYAL SOUTHERN HOSPITAL, LIVERPOOL.

BLOOD contains, in addition to the red and white corpuscles, a number of granular colourless cells, which present varied forms and sizes, and are generally very much smaller than the red corpuscles when examined in the ordinary way. They have a great tendency to adhere to the cover-glass or slide; they occur singly or in groups. Some time after the blood has been drawn from the finger these cells become clearer; if present in groups the individuality of the cells is lost, and the group becomes a single granular mass. In either case fibrin or fibrin-like processes protrude from their surface. These cells have been known for some time to Professor Norris, who has traced them in their development, and states them to be undeveloped red corpuscles. Bizzozero has lately studied them in the living capillary. In healthy blood they are present in extremely small numbers, but are very abundant in certain pathological states. I have examined these cells in 150 specimens of pathological blood, noting in each case the temperature of the patient from whom the blood was drawn, whether anæmic or not (in the last 100 cases, if anæmic, I noted roughly the degree of anæmia present), and lastly the nature and duration of the disease.

My observations lead me to believe that the small granular cells of the blood are present in excess under two conditions—firstly, as the result of their excessive formation brought about by certain states of the system demanding it; and secondly, as the result of diminished power in the process of charging them with hæmoglobin, whereby many of them remain in their undeveloped state, and do not become fully formed red cells.

In the inflammatory exudation produced by a blister, Dr. Burdon-Sanderson years ago found granular corpuscles which degenerated into fibrin. These corpuscles must be the cells under consideration at present, for these cells are constantly seen to change into fibrin, while leucocytes never undergo this change. Here, then, we have the important fact that in inflammatory serous exudation, such as we have in pleurisy, rheumatic fever, &c., the small granular corpuscles of the blood migrate from the bloodvessels. Dr. Burdon-Sanderson in his first Lumleian lecture this year described ordinary inflammation of the mesentery, and after referring to the migration of leucocytes he states that the surface of the mesentery becomes covered by a coagulable fluid. This coagulum, when examined under the microscope, is seen to consist of fibrin which Dr. Burdon-Sanderson ascribes to the degeneration of leucocytes. Now, if a drop of blood be examined under the microscope the leucocytes are seen to remain intact for a long time, and never undergo the same changes as the small granular cells—that is, they never degenerate into fibrin. Moreover, Professor Norris has found that the fibrin of coagulation is due to changes in the undeveloped red cells. We must come to the conclusion, then, that the coagulable fluid on the surface of the mesentery was full of undeveloped red cells, which had degenerated into fibrin—that is, that in ordinary inflammation, in addition to the migration of leucocytes, there is a migration of the small granular corpuscles. We have good grounds, then, for believing that not only in serous inflammatory exudation, but also in purulent exudation, there is a migration of the undeveloped red corpuscles. If, then, in local inflammation the blood is drained of its small granular corpuscles, nature must in some reflex manner stimulate the formative organs of these cells to increased action, in order to meet the demand made upon the blood. Hence in local inflammations we would expect to find an increase of these cells in the blood. I will not refer in these notes to the part played by leucocytes in the blood

under these conditions. Such an increase we find in inflammation. In acute abscesses the blood is loaded with undeveloped red cells. In a case of acute periostitis with a large amount of pus these cells were found abundant in the blood. In rheumatic fever and subacute rheumatism they are again present in abundance. In these last conditions we have serous inflammation in the joints, making a great demand upon the blood. During the fever of pneumonia I did not find the increase so marked as in rheumatic fever. Possibly the inflammatory exudation thrown out in pneumonia does not contain many small granular cells. That high temperature *per se* is not the cause of the increase of these cells was proved in a case of typhoid fever, where, after a fortnight of high temperature, there was scarcely any increase of these cells; also in another case of typhoid, with a temperature of 103·4°, and of five weeks' duration, the increase was very small. In typhoid there is no drain from the blood, at least no loss of the solid element of the blood, and therefore no demand is made for an increase in the production of these elements. In great loss of blood from hæmorrhage there is a great loss of the red corpuscles, and on the same principle we would expect after a time to find an increase of the undeveloped red cells, in order that they should replace the lost red cells. If after excessive hæmorrhage we examine the blood, we actually find a great increase in the number of the small granular cells. Another source of drain of the solid elements from the blood is found in chronic discharges of pus. In cases of spinal caries with discharge of pus, in cases of necrosis, in those where any large wound is constantly secreting pus—in fact, in all cases where there is chronic pus formation, the blood is full of undeveloped red cells. I shall show further on that a drain of the liquid element of the blood, however great, does not affect the number of these cells in the blood.

I will next consider the increase of the small granular cells in relation to anæmia. There appear to be two factors in the production of the anæmic state, both of which may be present together, but not necessarily. One factor is a lowering of the power by means of which the small granular corpuscles are charged with hæmoglobin, and changed therefore into fully developed red cells; the other is a lowering of the formative power, which creates the small granular corpuscles, and therefore which creates the fully formed red cells. In the one case the red cells, developed and undeveloped, are present in normal quantity, but the latter are in relative excess. Such a condition would obtain in chlorotic anæmia, where there is no loss of substance in the body, and therefore we would infer no loss of substance in the cellular element of the blood, but where an impaired vitality retards the full development of the red cells. Such a condition would obtain, also, in the convalescence from acute diseases. I have found, as a matter of fact, abundance of small granular corpuscles in the blood of chlorotic patients, and in that of those convalescing from rheumatic fever and pneumonia.

In the second kind of anæmia the predominant factor is the lowering of the formative energy. As a typical example we have the anæmia present in the malignant dyscrasia. Here there is a general loss of substance, not from any high temperature, as this may be altogether absent, but apparently from a general impairment of formative power. If thus the cells of the different organs suffer in their numerical formation, we may naturally suppose that the red cells of the blood are also placed in the same condition. This appears to me the only explanation which can account for the small increase of the undeveloped red cells which I have observed in cases of great anæmia and emaciation due to malignant growths. It appears to me that the red cells are diminished in number, so that the energy which charges the undeveloped ones with hæmoglobin has a smaller area over which to exert its strength, and thus although this energy too must necessarily be greatly impaired, and as a consequence some of the small granular cells must remain undeveloped, still the impaired energy has less work to do, there being fewer small granular cells to develop, and hence it is that in such conditions we find in the blood but a small increase in the number of the small granular cells. I believe that the same explanation must account for the small increase of these cells which I observed in a case of chronic dysentery with great anæmia and emaciation. The constant albuminoid discharge from the intestines appears to exert the same influence on the formative energy as in the case of the malignant dyscrasia. Lastly, the small increase observed in cases of chronic Bright's disease must be explained in the same way. In the cases of chronic Bright's disease and dysentery the blood is drained of its liquid element, and the increase of the undeveloped red cells is small; in those cases where the drain consisted of solid elements the increase was marked. It must be borne in mind that the two conditions under which an increase of the small granular cells is present may exist together in the same case. For example, in phthisis, where these conditions are typically present, these cells are very abundant. In phthisis we have cavities secreting pus, hence there is a reflex call for an increase in the formation of the granular cells. But in phthisis there is also a general impairment of vitality, therefore the power to charge these cells with hæmoglobin is weakened, and hence the very large number of undeveloped red cells seen in the blood of phthisical patients. Again, in cancer the disease of these cells, as explained above, is small, but let the cancer bleed or let it constantly discharge, and matters will be different. We now have a drain of the solid elements of the blood, with the accompanying increased reflex formation, and so we find, in bleeding cancers or in those from which there is a discharge, an abundance of small granular corpuscles in the blood.

In conclusion, I have purposely avoided in this paper any reference to the behaviour of leucocytes in the blood under the conditions in which the other cells have been considered. The increase of leucocytes in the blood under certain conditions is important, and the relation of their increase to that of the small granular cells in the same blood may one day prove to be of great diagnostic value. There is some ground for believing that, in certain classes of inflammations, the leucocytes are increased in greater relative proportion to the small granular cells, and *vice versâ*. By a knowledge of the conditions under which either increase takes place, we may, perhaps, be able, by an examination of the blood, to determine whether an ordinary pleurisy has become an empyema, and to arrive at other diagnoses. A clinical study of the blood in all cases is, therefore, of the highest importance.

REPORT OF A CASE OF HODGKIN'S DISEASE.

BY J. H. JEFFCOAT,
SURGEON-MAJOR, ARMY MEDICAL DEPARTMENT.

J. W——, aged twenty-one, of pale complexion, with dark hair and long eyelashes, a man of strumous diathesis, was admitted on Dec. 11th, 1880, to Fort Pitt Hospital, with inflammation of the glands of the neck. The case was regarded as an ordinary one of scrofulous enlargement, and treated in the usual way. A copy of the daily record of the case would be tedious and uninteresting; I will therefore confine myself to a selection of the salient points of it, noting the date on which the fresh symptoms were first observed.

Jan. 5th: The parotid and submaxillary glands are much enlarged and hard; the swelling extends from below the cricoid cartilage to about an inch and a half above the angle of the lower jaw. His general health is but little affected.—10th: Softening is commencing below the jaw; there is much constitutional disturbance; breath fetid; tongue foul; sordes on teeth; the swelling is pressing on the œsophagus and trachea, causing dyspnœa and difficulty of deglutition.—14th: An aspirator was applied to the swelling beneath the jaw, and two ounces of unhealthy pus were drawn off, thereby greatly relieving the dyspnœa and difficulty of deglutition. There is hectic fever, and symptoms described on the 10th continue.—17th: Abscess has ceased to discharge; his general health has improved.—20th: Very much improved in health; there is no hectic fever; his tongue is clean, his bowels are regular, and his appetite is good. Two swellings have now appeared in the left groin, one above and one below Poupart's ligament. They are hard, but not painful.

February 1st: The glands in the groin are as large as pigeon's eggs; hard and painless; no sign of suppuration.—12th: The swellings in the groin have diminished greatly in size; the lymphatic glands of the left side of the neck have become swollen, but they are painless.—17th: The glands in the groin are now in their normal condition, and the

swelling on the left side of the neck has diminished. There is œdema of the penis and scrotum.

March 1st: General health not much affected; appetite good; œdema of scrotum and penis diminished.—11th: Allowed up to-day; slight œdema of scrotum and penis.—11th: Health much improved and he is gaining strength, but the glands of the neck are much enlarged, and those of the groin and axilla are commencing to swell.—24th: General health much the same as at last report; glandular swellings *in statu quo;* œdema of scrotum and penis continues.

April 1st: Suffers from diarrhœa and some tenderness over the region of the liver. The glandular swellings and œdema in the same condition as when last reported; he is growing weaker.—9th: Great irritation of stomach, dulness over the region of the spleen, and there is some tympanites of the abdomen. He is much weaker, and his appetite has gone; any food is with difficulty retained in the stomach.—16th: Complains of dull pain in the left side and dyspnœa; respiratory sounds feeble, otherwise normal; no pleuritic friction.—25th: Dulness at base of both lungs, varying according to the position of the patient; no sign of acute inflammation; the condition of glands and œdema of penis and scrotum remain the same; the irritability of stomach is distressing; he is growing much weaker; the abdomen is tympanitic; he is very anæmic.

May 1st: Effusion in chest increasing, causing great dyspnœa; vomiting troublesome; slight diarrhœa; glandular swellings and œdema of penis and scrotum continue in the same condition.—4th: His strength is failing fast; dyspnœa, owing to effusion in chest, severe; vomiting troublesome; in addition to the glandular swellings already noticed, slight enlargements of glands at the back of neck, bend of elbow, and in popliteal spaces are observed; œdema of scrotum and penis exists.—10th: No fresh symptoms worthy of remark; he is evidently sinking.—13th: Died at 5 A.M. Temperature and pulse record omitted for the sake of brevity.

Treatment.—At first the usual treatment for scrofulous enlargement of the glands was followed. Compound tincture of iodine was applied to the swelling, and after a mild purgative cod-liver oil and a mixture of citrate of iron and quinine were administered; when signs of suppuration showed themselves poultices were applied, and a gargle composed of chlorate of potash and bark was given to cleanse the throat. When the gland had ceased to suppurate, a mixture containing iodide of potassium was substituted for that of citrate of iron and quinine. The œdema of scrotum and penis was relieved by puncturing and the application of warm fomentations. At the end of February iron and quinine were again given and the mixture of iodide of potassium discontinued. The diarrhœa was easily checked by small doses of rhubarb followed by Dover's powder. Ice afforded the greatest relief for the sickness of stomach; mixtures containing subnitrate of bismuth, dilute hydrocyanic acid and morphia were of no avail. Turpentine fomentations were applied to the chest when pain and dyspnœa were complained of; the patient was too weak to bear paracentesis of the throat. From my own experience and from what I have read of Hodgkin's disease, no line of treatment is likely to effect a cure. The diet was as nourishing as possible; when there was difficulty of swallowing, milk, beef-tea, and port-wine could alone be taken.

Post-mortem appearances.—Body much emaciated; hypostatic congestion well marked. Rigor mortis present thirty-one hours after death. Lymphatic glands in axilla, neck, submaxillary regions, groins, elbows, and popliteal spaces enlarged and hardened. Thorax: About six quarts of cloudy serum were taken from the pleuritic cavities, whose walls were coated with lymph of a low type. The left lung was greatly compressed: weight 7 oz. The right lung also compressed, but to a less degree: weight 1 lb. No deposit found in either lung. Both lungs very pale, and as if they had been macerated for some time. One ounce of serum in pericardial sac. Heart anæmic, and as if macerated; otherwise healthy: weight 8 oz. The lymphatic glands in anterior and posterior mediastina much enlarged. Abdomen: The mesenteric glands enormously enlarged. Liver weighed 3 lb. 14 oz.; was pale and anæmic. Lymphatic glands in fissure of gall bladder much enlarged. No new growth of lymphatic tissue in liver. Spleen: Surface irregular and nodulated; three-fourths of the organ were connected with a greyish-white substance of the consistence of brain, the margin only retaining its normal colour and substance: weight 16 oz. Kidneys: Both very anæmic, and having the appearance of having been macerated; otherwise healthy. Small intestines: Peyer's patches were congested, but not enlarged or projecting. The stomach was normal. A section of the spleen and a portion of a mesenteric gland, placed under the microscope, showed a preponderance of small round cells, like lymph-corpuscles, the intercellular substance being scarcely perceptible. In all places the kidney-like shape of the glands was preserved, but they were enlarged, juicy, and harder than normal. They were of a light greyish-yellow colour, which, on exposure to the air, changed to yellowish-red. The blood was of a pinkish colour. The tonsils were slightly enlarged. The brain was not examined.

Remarks.—On admission into hospital this man presented all the appearances of one suffering from ordinary scrofulous disease of the glands of the neck, and the subsequent tendency to degeneration and breaking down of their structure with unhealthy suppuration strengthened that opinion, which was confirmed by his strumous aspect; and it was not until the glands of the groin and axilla became swollen and hardened that any suspicion of the true disease was excited. The cause of this disease is very obscure. Billroth considers that lymphoma originates either in consequence of some inflammatory and secondary swelling of the lymphatic glands, or as an idiopathic hyperplasia. I am inclined to believe in the former origin; and it is just possible that some irritating product of the primary inflammation may be carried along the lymph vessels and affect the lymphatic glands of the body generally, producing a form of blood-poisoning. Billroth applies the term "scrofulous diathesis" to such residuary secondary hyperplastic processes of the lymph glands; but in the present case none of the glands (except those of the neck, the seat of primary affection) were disorganised, none were caseous, calcified, or suppurating, which would have been the case had the glandular swellings been simply scrofulous. It is worthy of note, as bearing on the case, that there is no hereditary history of scrofula, although his aspect was strumous. I think this a true case of Hodgkin's disease, which Trousseau designated "adénie," and which is sometimes called "anæmia lymphasica." It is not simply lymphoma, because the spleen was so seriously affected. Nor was it a case of leucocythæmia, for, although the lymphatic glands may occasionally be affected in the latter disease, there was not simply hypertrophy of the parenchyma of the organ, but there was an invasion of lymphatic tissue, to the almost total destruction of the normal parenchyma; besides, the preponderance of white corpuscles, a necessary symptom of leucocythæmia, was not discovered. Billroth states that lymphoma usually occurs in the young, from eight to twenty years of age, but that it may appear up to the sixtieth year, but very rarely; for he remarks that, with the exception of a woman aged forty-five who died of asthma, and an old man aged sixty-five who had an immense lymphoma of the axillary gland, he believes it never originated after the thirtieth year. Last autumn I saw a case which was brought before the local meeting of the British Medical Association at Maidstone by Dr. Monckton. It was that of a man, aged about sixty, in whom a large nodulated glandular mass occupied one side of the neck, and extended over the sternum. As a case of Hodgkin's disease cannot occur without lymphoma, I presume that the remarks regarding the age of patients attacked with the latter must apply equally well to the former affection. As the case proved fatal in five months from its commencement, one may venture to consider it an acute one; nor does the fact that pleuritis hastened his death weaken that assertion, for he was so anæmic, had such exacerbations of fever, was troubled with diarrhœa, and suffered so severely from vomiting, that had pleuritis not supervened life would not have been much prolonged; besides, the inflammation was of a very asthenic type, and death was accelerated by the pressure of the fluid in the pleura on the lungs. Irrespective of pleuritis such effusion was to be expected, because dropsical effusions are usual symptoms of the disease. Œdema of the legs is also noted as of common occurrence: in this case there was no œdema of the legs, but œdema of the penis and scrotum was present, due probably to some local pressure on the veins. In no instance were the glands fused into a nodulated mass—additional evidence in favour of the acuteness of the disease. All writers on this affection regard the prognosis of it as most unfavourable; it may be observed that in youth the growths are either benign or acute, while in old age they show a tendency to become chronic or malignant.

Fort Pitt, Chatham.

REPORT OF A CASE OF MYXŒDEMA.

BY ARTHUR LATTEY, L.R.C.P. LOND.

MRS. W. C——, aged fifty-seven, was quite healthy until seven years ago, when she had what she describes as a fit, and was unconscious for more than an hour. The attack was not repeated, but her general health became bad, and a medical man who saw her about that time is reported to have said that she had a diseased heart, a diseased liver, and disease of the spine. The catamenia ceased about a year afterwards, and her health became somewhat better. She keeps a small grocer's shop, lives in an aguish district, and has suffered from ague on one occasion for more than nine months.

I first saw the patient in November, 1879, when her condition was as follows. The countenance was inexpressive and apathetic, the lips thick and everted, and the angles of the mouth depressed. There was marked œdema of both upper and lower lids, and the complexion was muddy and yellow, with a fixed brickdust-coloured patch on both cheeks. Heart sounds normal, but somewhat feeble. Pulse 68. Urine: sp. gr. 1024; no sugar, albumen, or deposits. Her principal complaint was of weakness and flatulent dyspepsia; being a large tea-drinker, that was not to be wondered at. She improved under bitter tonics—gentian, quassia, &c.

I was again asked to see her on May 21st, 1882. She has gradually been getting more dull and heavy. She cannot use her fingers well, and has to get her customers to do up their parcels of tea and sugar for themselves; her fingers, too, are visibly thickened. Her face has a very vacant look, and the countenance generally is broadened. Her eyes water a great deal, and her sight is not so good, but the ophthalmoscope reveals nothing unusual. She is constantly dribbling, and at night her pillows get wet through with saliva. During the last year she has become almost completely bald. Her hearing is bad, and there is bleeding from the right ear. Her speech is peculiarly slow and deliberate, but she expresses herself well, and does not stumble in her words. At night, when she takes off her stockings, she can shake the epithelium out of them "just like flour." I could not detect any enlargement of the liver or spleen. The urine is perfectly healthy, and the heart sounds are as they were more than two years ago. She appears to derive most benefit from ammonia and gentian; under their administration her appetite has improved and she has gained some strength. The disease appears to me to depend upon disordered nutrition, with paresis of the vaso-motor nervous system. The skin generally becomes doughy and dry, and loses its natural oiliness and elasticity. Tactile sensibility is in consequence much diminished, and the faculties sink more or less into a condition of hebetude.

Southminster.

SEVERE URÆMIC CONVULSIONS AND COMA TREATED BY INHALATION OF CHLOROFORM AND SALICYLATE OF SODA; RECOVERY.

BY THOS. A. J. COCKSEDGE, M.A. CANTAB.,
SURGEON A.M.D. (H.P.).

ON the 28th of April I received an urgent message to attend the Rev. C. M——. He had been under my charge for some weeks as he was suffering from chronic desquamative nephritis, complicated with asthma. His kidney disease is, I believe, of nine years' standing. I found him semi-comatose, and during the day he gradually lapsed into a condition of profound coma. Convulsions came on about 1 P.M.; they occurred at first with intervals of about one hour, and as the day wore on, although less violent, with intervals of about twenty minutes. His last convulsion took place about midnight. He was seen by Mr. Martin Coates of Salisbury with me about 11 P.M. He was then perfectly comatose, the pupils being quite insensitive to light. Mr. Coates considered him to be in a desperate condition, and I confess that I quite agreed with the prognosis. However, on visiting him again after Mr. Coates left I found the convulsions so much less violent that I became more hopeful. The next day there had been no recurrence of the spasms, and he steadily progressed towards recovery. The treatment of the case was as follows. Mustard and water was applied to the feet. Turpentine enemata were injected into the rectum. Podophyllin and jalapine were given by the mouth, being introduced through a quill. The surface of the body was sponged over with vinegar and water, and profuse diaphoresis was thus induced. Chloroform was administered by inhalation during two of the severest spasms. On the second occasion, however, I noticed that respiration was with such difficulty re-established that I did not venture on a third administration of this remedy. Before leaving on the morning of the 29th I gave him an enema, almost as hot as I could bear my finger in, of very weak mutton broth, this being the first food which he had taken since his evening meal of the 27th. On the 29th, as soon as he was able to swallow, I gave him seven and a half grain doses of salicylate of soda in weak milk and water every six hours. I am sorry that full notes of the case were not taken; my excuse for this must be that I was so busy that I really had not the time to make them. I consider that details, unless exact, are worse than valueless.

I am induced to send this case for publication, as Mr. Coates assures me that in an experience of over forty years he has never seen such a severe case of uræmia recover. I may mention that I suggested bleeding from the arm, and that Mr. Coates quite agreed with me about this, but it was not allowed by the family. I notice a case of recovery at Geneva following bleeding, reported in THE LANCET of May 6th.

Broadchalke, Salisbury.

THE USE OF MORPHIA HYPODERMICALLY AS AN ADJUVANT TO CHLOROFORM.

BY ANDREW S. CURRIE, M.D. EDIN., &c.

AN interesting paper "On the Combined Use of Morphia and Chloroform in producing and maintaining Surgical Anæsthesia," by Dr. Alexander Crombie, Superintendent of the Medical School, Dacca, Bengal, was published in the *Practitioner* in December, 1881. This paper does not appear to have attracted the notice it deserved, both on account of its originality and the remarkable results obtained by the method described by the author. Dr. Crombie states as the result of his personal experience that out of about 600 cases in only one was there threatened asphyxia, "and in that instance the usual precautions had been neglected." The method employed is very simple, and consists in the hypodermic injection of morphia immediately after beginning the administration of chloroform. I have recently employed a modification of this plan with the greatest comfort to the patient and to myself. About ten minutes before administering the chloroform I inject a full dose of the liq. morphiæ hypod. (B.P.). The chloroform is freely sprinkled on a piece of lint folded twice, and one dose is as a rule sufficient to induce complete anæsthesia.

Having a day or two ago to open a large abscess of the thigh, in the case of a lady who has been an invalid for the last ten or twelve months, I induced anæsthesia easily and rapidly in this way. The patient, who has repeatedly had chloroform administered for confinements, tooth extraction, &c., assured me that she had never before taken it with such a total absence of all feeling of discomfort. There was no sensation of suffocation and no trouble with after-sickness, which had on previous occasions proved troublesome.

Lydney, Gloucestershire.

WEST LONDON HOSPITAL.—The growing usefulness of this charity may be estimated from the fact that in 1862, two years after its establishment, 82 in-patients were admitted, whereas last year the number had increased to 611. At a festival held at Willis's Rooms on the 17th inst. in aid of the funds of the hospital, the chairman, Viscount Enfield, expressed the hope that in the ensuing year the number of beds would be raised to 100, towards the realisation of which anticipation, a sum between £900 and £1000 was subscribed in the course of the evening.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

GUY'S HOSPITAL.

INTERESTING SURGICAL CASES.

(Under the care of Mr. THOMAS BRYANT.)

CASE 1. *Large collection of pus simulating ovarian tumour; pelvic cellulitis; vaginal incisions and drainage.* (Reported by Mr. Coulahan.)—Eliza B——, aged thirty-two, married, was admitted into Lydia ward on June 12th, 1880. She had been married eight years, had had two children, and on both occasions instruments were used. Both children were alive and well. Since her last confinement, five months before admission, she had never been well. Three weeks ago, the patient was unable to pass her urine. A catheter was used; the urine contained much blood, and some clots. Catheters had been passed since, and her legs felt very numbed and cold afterwards. She had a constant pain down the outside of the right leg, from the hip to the foot, and then extending across the sole. On admission, the following notes were made:—Patient felt weak; she was menstruating, which she said was always regular; her water was drawn three times a day. She passed a little urine on June 13th in a standing position; the bladder when distended reached nearly to the umbilicus, and was slightly displaced to the left; when empty a large, firm elastic tumour was to be felt above the pubis, about the size of a fist; per vaginam a tumour was felt pressing on the anterior and right lateral half of the vaginal wall, and pressing on the neck of the bladder, causing a mechanical obstruction; there was no pain or retention of urine after delivery.

Dr. Galabin examined the patient, and found the os uteri much displaced upwards and forwards; a sound passed about two inches and a half; it seemed to rotate a little, as if the uterine cavity were enlarged, but did not readily move the uterus; a large globular firm mass was discovered behind the uterus, which appeared firmly fixed on the pelvis of the left side. It was probably a uterine out-growth, but might have been a solid ovarian tumour, or just possibly an extra-uterine fœtation.

June 16th: A catheter was passed, but no water was drawn off.—17th: The bladder was felt near the umbilicus quite dull; the urine was albuminous. — 18th: The abdomen was very sore, particularly when the bladder was distended; the water was drawn after about the lapse of twelve hours. After this the urine passed easily.—29th: Under chloroform a trocar was passed per vaginam into the fluctuating tumour, and thirty-eight ounces of pus escaped. An injection of iodine was passed through the cannula, and the cannula itself left in. Oiled gauze and lint and a T-bandage were applied; also a morphia suppository. Continued sickness after operation.

July 1st: Discharge passes rather freely; passes water easily four or five times per day. — 5th: Very slight discharge; no pain over the abdomen on pressure. — 6th: Drainage-tube taken out. — 9th: The patient has not felt so well since discharge has ceased. To-day she was placed in a lithotomy position, and a bivalve speculum was passed in the vagina, and the old opening was probed. — 10th: No pain over the abdomen. To have quinine mixture.—15th: Much discharge, and the patient feels better.—19th: Discharging still. Patient feels no pain; she looks very anæmic. She has been sick several mornings; it is unaccompanied with nausea, is very sudden, and does not leave any nausea.—20th: Discharge stopped, but returned next day.—27th: Discharge comes on more at night, and is very fetid, causing sickness.—30th: Discharge less fetid.

Aug. 11th: All discharge stopped. — 25th: Patient left the hospital.

	Morning temp.	Evening temp.
June 30th,	101·6°	99·2°
July 1st,	97·6	97·4
,, 2nd,	97·5	97·4
,, 3rd,	97·6	96·8
,, 5th,	97·4	98·8
,, 7th,	98·6	101·8
,, 8th,	99·4	101·2
,, 9th,	99·6	102·0
,, 10th,	101·8	102·1
,, 11th,	100·6	101·8
,, 12th,	100·4	102·6
,, 15th,	100·2	100·0
,, 16th,	100·8	100·0
July 17th,	98·6°	101·2°
,, 18th,	97·8	103·2
,, 19th,	97·8	103·0
,, 20th,	99·8	102·5
,, 21st,	101·6	99·6
,, 22nd,	99·3	102·1
,, 23rd,	100·8	103·6
,, 24th,	101·0	102·1
,, 25th,	—	100·4
,, 26th,	100·8	101·8
,, 27th,	101·1	—
,, 28th,	100·4	99·2
,, 29th,	100·2	100·8

After the 30th the temperature did not rise above 98·4°, and was sometimes as low as 96·4°.

CASE 2. *Ruptured liver; death.* (Reported by Mr. J. L. Kidd.)—Robert S——, aged twenty, was admitted into the accident ward on Jan. 3rd, 1882. He was pushing a truck before him when a horse ran into him, striking him in the back, and throwing him forwards to the ground. He was sure he had not been run over. On admission, at 11.30 A.M., half an hour after the accident, he was collapsed; pulse scarcely perceptible, respiration 56. While being put to bed he became violent, and recovered somewhat from the collapse. The pupils were dilated, and did not respond to light. He continued to struggle a good deal, and was tied down in his bed. His nose was cut and bled a little. At 12.25 his pupils were less dilated. At 12.30 he died, an hour and a half after the accident.

Necropsy.—The liver was completely ruptured from before backward, parallel with the median fissure, and one inch distant in the greater part of its extent through the right lobe. There was a graze over the fifth lumbar spine, and a subperitoneal hæmorrhage the size of a crown-piece just above the pubis. There were other more extensive subperitoneal hæmorrhages on both flanks, especially the right. Kidneys and spleen were healthy; the lungs somewhat œdematous, but not incised; brain healthy.

CASE 3. *Contused loin; retention of urine for five days; cure.* (Reported by Mr. J. L. Kidd.)—Samuel R——, aged twenty-seven, a carman, was knocked down by a tramcar on Dec. 2nd, 1881, and pushed along the ground for some few feet in front of the wheel. The wheel struck him on the back, behind the left ribs. He was taken to the hospital and admitted into the accident ward. He stated he had had phthisis, that he was a free drinker, and that his urine was from time to time thick and of a dark colour. On admission he complained of great pain in the left loin, over the region of the kidney, but nothing could be made out by palpation. He was unable to pass his water. Rest prescribed and milk diet. On the following day urine was drawn off by catheter, about twenty ounces, free from blood, and containing no albumen. He had not been sick since admission. On the 4th, 5th, and 6th the urine was drawn off morning and evening. On the 9th he was free from pain in the injured loin, and felt perfectly well; he was able to pass his urine.

NORTH STAFFORDSHIRE INFIRMARY.

LARGE SARCOMATOUS TUMOUR OF PROSTATE GLAND; EXCISION; FATAL RESULT; REMARKS.

(Under the care of Mr. SPANTON.)

FOR the following notes we are indebted to Mr. W. Clegg, house-surgeon.

R. W——, a labourer, aged fifty-seven years, a widower, was admitted into the surgical ward on January 16th, 1882. The patient had previously been under treatment in the medical ward for an abdominal swelling, which was supposed to be caused by a large accumulation in the rectum and colon. About two years previously he had experienced some difficulty in defecation, which had greatly increased up to the time of admission. A heavy, dragging pain about the rectum was felt after a day's work. A surgeon whom the patient consulted about a year before had removed some hard fæces from the rectum, but without affording any relief. Six weeks previous to admission the patient was

compelled to cease work. The desire to evacuate a stool was almost incessant, but the attempt to do so was ineffectual and caused much pain. He had no difficulty in micturition; never had any hæmaturia.

On admission, the patient's aspect was that of a healthy man worn by constant pain, but fairly well nourished. He was unable to sit, owing to the pain caused thereby. He complained of constant pain, referred to the region of the rectum, with an incessant desire for the bowels to act. Over the left hypochondriac and epigastric regions was a considerable rounded swelling, clearly due to an enormously loaded colon. On passing the hand into the rectum, the prostate was felt as a large tumour the size of a fœtal head, lobulated, firm, and elastic, with a sulcus dividing it unequally, and pressing on the rectum so much as to practically occlude it. By means of the hand a large mass of hardened fæces was removed from the sigmoid flexure, the rectum itself being flattened and empty. A trocar was passed into the substance of the tumour, which brought away only a small amount of the solid matter forming the tumour. A microscopic examination showed this to consist of a fine fibrous structure with unstriped muscular tissue, and interspersed among these numerous cells and free nuclei, mostly round, but some more or less elongated. In some of them two or three nuclei were seen, large and distinct. A sound passed easily into the bladder and was deflected to the right side. Urine was passed without difficulty, pale, clear, acid, sp. gr. 1010, free from albumen.

A consultation of the staff was held, at which it was decided that the best means of giving relief to the patient lay in the removal of the tumour, which was evidently almost blocking up the pelvis. This was considered preferable to colotomy, inasmuch as, if it proved successful, future bladder complications might be prevented at the same time that the pressure of the tumour on the rectum would be entirely removed. Accordingly, on January 26th, the patient being under ether, the operation was performed. Mr. Spanton made a transverse curved incision immediately in front of the anus, and by dissecting carefully down reached the prostatic tumour. A catheter had been previously passed into the bladder as a guide to the position of the urethra. On passing the fingers into the perineal wound it was found that the rectum was torn, probably by the previous manipulations, and the tumour was with some difficulty separated from it. By means of the fingers and the handle of the scalpel a large mass of tumour was carefully enucleated, and removed in several portions, as it proved to be much more friable than was anticipated. After the removal of a mass larger than the closed fist it was found that a further portion of it extended upwards, behind the symphysis pubis, which it was quite impossible to reach with safety. Several vessels were ligatured, but the hæmorrhage being somewhat profuse the cavity was plugged, a large catheter being retained in the bladder. The patient was much exhausted, but rallied fairly after removal to bed, and an opiate suppository was administered. No further hæmorrhage occurred, but the patient gradually became weaker and died the day following.

Necropsy twenty-four hours after death.—An incision being made in the linea alba, extending down the left side of the penis and scrotum, the symphysis pubis was divided and the bone widely separated. A rounded lobulated tumour was then seen extending behind and above the symphysis for about two inches, and laterally about three inches. It overlapped the bladder so completely as to conceal that viscus, which was found to be of normal size. The tumour was not adherent to the peritoneum, which was free from any trace of disease or injury, but the tumour was almost incorporated with the anterior wall of the rectum at the lower part, from which the larger portion of the tumour had been removed. The colon and cæcum were loaded with masses of fæces, which were almost stony in consistence. Ureters and kidneys normal. Spleen had on its outer surface a large white patch, which on being cut into was found almost cartilaginous, and extended for about a quarter of an inch into its substance. No similar deposit was observed elsewhere. Microscopically it was found to consist of fibro-cartilage. There was no sign of hæmorrhage into the upper part of the rectum or peritoneal cavity. The bladder was empty. In the substance of the tumour was found a phosphatic calculus of small size. The tumour was encapsuled, lobulated, and was in appearance much like brain hardened by spirit. The microscopical appearances were similar to those afforded by that portion of the tumour already described; but a more complete examination showed also numerous brood cells, and a large amount of spindle cells, some with one, others with more than one nucleus. A large part of it was made up of these cells, with a distinct fibrous stroma.

Remarks.—Tumours of the prostate of such large size are by no means common, and we have as yet little experience of similar cases to guide us as to the best course to adopt. Whether it might have been wiser in this case to trust to colotomy or some similar proceeding may be an open question. It was fairly considered, and the conclusion we arrived at was that, even if by such means temporary relief were afforded, the passage of urine would soon become a source of even greater danger. If the removal of the tumour had been successful, entire relief would be afforded for some time at any rate. It was quite clear we could not allow the patient to remain in the condition he was—one of the most abject misery, which could only be likened to that of a woman in labour with the fœtal head fixed in the pelvis. Excision, therefore, appeared to offer the best prospect of relief; and I believe that if the tumour had been less extensive, a more favourable result might have been obtained.

NOTTINGHAM BOROUGH ASYLUM.

NECROPSY OF A CASE OF CONGENITAL MALPOSITION OF THE RIGHT KIDNEY, BY MR. POWELL.

THE subject of the post-mortem was a man aged forty-five, who had been a patient in this asylum for little more than a year, suffering from melancholia. His death was due to atrophy of the brain, and had no connexion with the abnormality. All the abdominal organs were in their normal positions except the right kidney, which was found lying on the bodies of the fourth and last lumbar vertebræ, as nearly as possible in the median line, and covering the upper part of the common iliac vessels and bifurcation of the aorta. The organ was smaller than was natural, and of an irregularly rounded shape anteriorly, but concave posteriorly and fitting on to the bodies of the vertebræ. At its upper extremity and to the left it was joined to the lower end of the left kidney, which was normal in size and shape, except that the lower end was somewhat elongated and pulled forward. On the anterior aspect of the abnormally placed organ was a fissure running obliquely downwards from left to right, and in this lay the ureter, which passed down in front of the iliac vessels and entered the bladder in its normal position. The right renal artery was derived from the aorta an inch above its bifurcation, and entered the kidney at the upper extremity of the fissure above alluded to. Three smaller arteries springing from the right common iliac also entered the kidney posteriorly. The left kidney had its own ureter, which passed down beneath the junction of the two kidneys on its way to the bladder. The right supra-renal capsule was in its normal position, and consequently some distance away from the kidney. The tissue of both kidneys had to the naked eye a healthy appearance.

Medical Societies.

ROYAL MEDICAL & CHIRURGICAL SOCIETY.

The Action of Salts of Potash, Soda, and Ammonia on the Frog's Heart.—Cases of Osteitis deformans.—Two Cases of Malignant Pustule, together with a Table of Seventeen Cases which have been treated at Guy's Hospital.

THE concluding meeting of the Society for this session was held on the 13th inst., J. Marshall, Esq., F.R.S., President, in the chair. An important paper on experimental therapeutics, by Drs. Ringer and Sainsbury, was read in abstract; this was followed by a further contribution on osteitis deformans by Sir James Paget; and a paper descriptive of cases of malignant pustule, by Mr. Davies-Colley, in which the early excision of the local lesion was strongly advocated.

The following is an abstract of the paper concerning the Action of Salts of Potash, Soda, and Ammonia on the Frog's Heart, by Dr. SYDNEY RINGER, M.D., and Dr. HARRINGTON

SAINSBURY. The present paper describes experiments made during the months of November and December, 1881, January and the early part of February, 1882, the special object of which was to compare the salts of soda, ammonia, and potash in respect of their action. The ventricle of the frog's heart was selected for this purpose; it was fed with a mixture of saline three-fourths per cent., and a solution of dried bullock's blood. To the circulating fluid the drug to be tested was added. The contractions of the heart were recorded on a revolving cylinder. The drugs were tested in two directions: 1st. As to their influence on the spontaneous working of the heart. 2nd. As to their influence in modifying the effect of continuous faradisation. The effect of continuous faradisation applied to the undrugged heart is a condition of continuous contraction—i.e., a spasm of greater or less extent. A certain strength of current and frequency of interruption are, however, required for the above effect. To this persistent spasm, the chief factor in which is fusion of neighbouring contractions, the term "tetanus" is applied. Marey has principally described tetanus of the heart, though before him Lucian had drawn attention to the subject. The chief point of interest about cardiac tetanus is that, given a minimal stimulus adequate to cause contraction of the heart, repetition of this, however great the frequency, will not cause fusion, or spasm; the necessary element, a certain frequency of repetition being given, is increase in the strength of the current. In this respect cardiac tetanus contrasts with that of a voluntary muscle. The explanation, according to Marey, is briefly stated as follows. The excitability of the heart is a varying quantity. During the period represented by each systole it is at a minimum, and a nominal stimulus is during this period ineffectual. Above a certain frequency of minimal stimuli further increase will hence be ineffectual, since those stimuli, acting during the above "refractory period," will be without effect. Increased strength of currents, however, lessens this period, and above a certain strength of current every stimulus is responded to, and fusion—i.e., tetanus—results. The results here obtained were in accordance with Marey's statements; and his further statement that heat diminished, whilst cold prolonged, the refractory period, was also confirmed; since, other things being equal, heat favoured the production of tetanus, whilst cold hindered it. Tetanus, or continued contraction, is facilitated by three modes:—1st. By diminution of the refractory period, whereby fusion is favoured. Increased strength of current will do this; rise of temperature also. Further, certain drugs will do this, such as are said to increase excitability. 2nd. By prolonging the duration of each beat. 3rd. By the induction of a state of persistent spasm, probably of the nature of tonus. It is clear that, *cæteris paribus*, the second and third must aid the production of tetanus as above defined. (For a description of the persistent—tonic?—spasm referred to under No. 3, see the *Journal of Physiology*, Dec. 1881.) The effect of exhaustion was tried, but it did not appear to facilitate or impede the production of tetanus. Hydrate of soda, ammonia, and potash were tested, as regards their effect as favouring or hindering the production of tetanus. Soda was found to favour tetanus; ammonia also, and in a marked degree. Potash from the very commencement hindered the production of tetanus. In the later stages a curious effect was noted; the faradisation, instead of tending to produce tetanus, now showed an opposite tendency—it suppressed the spontaneous beat. Of these three bases, then, soda and ammonia go together as increasing faradaic excitability, and contrast markedly with potash, of which the action was exactly opposite. The influence of drugs on the spontaneous working of the heart was next examined. The following were examined: hydrate of potassium, the iodides, bromides, and chlorides of sodium, ammonium, and potassium; also the citrates of these three bases. Amongst the results obtained the most striking was that the action of a drug on a rhythmically contracting tissue may show itself in two directions. 1st. It may affect the contraction rate. 2nd. It may affect the actual value of the beats themselves. In all the cases examined both were affected, but unequally; with one drug the stress would fall on the contraction rate, with another on the value of the beats themselves. For the term "contraction rate" the word "excitability" has been substituted; for the "value of the beats" the word "contractility." The substitutes are taken to represent that which underlies the one and the other manifestation. The reasons for the choice of the term "excitability" are stated in the paper. The question then arises, Are excitability and contractility intimately connected? Does action on the one necessarily involve action on the other? or may they be more or less dissociated, and separately, subject to influence? The evidence points very clearly to dissociation, for neither qualitatively nor quantitatively does there appear to be any constant relation between the two. Thus increased frequency of contraction may be accompanied at one time by increased height of beat, at another by diminished height, and this not only in the case of different hearts, but even in the same heart. Then, again, in respect to quantitative relation, one finds at one time and in the same heart marked effect on excitability, with little noticeable effect on contractility—i.e., there may be marked slowing with scarcely affected height of trace; at another time, with little appreciable effect on frequency, the stress falls on contractility. Hence one may speak of a drug as acting on either excitability or contractility, and the results summarised are, that in no case examined was the action exclusively in one or other direction. This will probably hold for all drugs—that the degree in which one or other suffers varies with the drug. Thus with the chlorides, bromides, and iodides of the bases, sodium, ammonium, and potassium. The salt of sodium and ammonium affect excitability but slightly, whilst those of potassium affect excitability markedly; and thus, whilst it was the exception in the case of the latter not to get permanent arrest of spontaneous beats before contractility was destroyed, with the salts of ammonium and sodium it was the exception when spontaneous beats did not continue up to the very end, and, moreover, with a final frequency little short of, often an excess of, the original frequency. In respect of influence on excitability, ammonium and potassium form the extremes, sodium is intermediate, though much nearer ammonium than potassium. As to the action on contractility, the quantities of the drugs used constitute the measure of activity. Stated approximately, potassium and ammonium come very near together, whilst a wide gap separates these from sodium salts; thus the highest estimate would represent the sodium salts of this group as one-tenth as poisonous as the potassium and ammonium salts. It is important not to take action on contractility as the exclusive measure of poisonous action, for arrest may also be effected by action on excitability; and from a clinical standpoint "arrest" is that which concerns us more immediately than the precise "mode in which." Hence, in order of poisonous action we have: First, potassium salts most poisonous; both excitability and contractility powerfully affected. Next ammonium salts; excitability practically unaffected; contractility powerfully affected. Then a wide gap separating sodium salts; excitability slightly affected, but contractility suffering chiefly. The therapeutic importance of these results is obvious, the more so that the iodides and bromides of potassium and ammonium are so very largely used. The inference, it must be observed, from the ventricle tied on to the cannula to the entire organism, is simply to this extent: under simple conditions it is found that one drug is far more active than another. Is it not fair to assume that it will still prove itself more active under more complex conditions; at any rate, under such as the organism as a whole presents? Hence these experiments would suggest the substitution of the bromides and iodides of sodium in preference to those either of potassium or ammonium, and that of those two the ammonium salt is to be preferred to the potassium salt. The suggestion has the greater force that so far as clinical experience goes the salts of sodium and ammonium would appear to be as effective as those of potassium. One or two points remain. Thus throughout the salts of potassium examined from the hydrate to the citrate certain characters are found to be in common. The same holds for ammonium salts. The sodium salts are, for reasons given in the paper, less fitted for comparison, thence, confining the attention to the salts of ammonium and potassium, the fact to be pointed out is that only with identity of base goes similarity of action. It is further pointed out that this last implies that elements entering into combination do not lose their individuality of action, and this may possibly account for an apparent discrepancy between the results here given and clinical experience; for, as here given, the citrates of potassium and ammonium are at least as poisonous as the bromides, iodides, and chlorides, a result quite opposed to clinical experience, but not irreconcilable if but one side, as it were, of a drug is here taken into account. Finally, experiments on the citrates of sodium, ammonium, and potas-

sium were made. The results were very similar in kind to those already obtained, and the general statements applying to the chloride group may be extended to these salts. The chief points to be noted are: That in respect of the sodium salt the citrate was, at the lowest estimate, doubly as poisonous as the sodium salts of the chloride group; still even this leaves it only one-fifth as poisonous as the ammonium and potassium citrates. That the ammonium and potassium citrates are about as poisonous as the salts of those bases belonging to the chloride group. These numbers refer alone to the effect on contractility, for in respect of excitability there was much less tendency towards inhibition with potassium citrate than with the potash salts of the chloride group. It may be stated, in conclusion, that the essential points which these experiments establish are: (1st) the twofold modes in which drugs may affect the cardiac tissue —viz., in respect of excitability and contractility; (2) the relative activity of the salts of sodium, ammonium, or potassium, under similar conditions. Both of these points, but especially the latter, have very practical outcomes.—The PRESIDENT said that these researches threw a new light upon the action of the salts in question, and showed the importance of a continuance, through good report and through evil report, of experimental research for the advancement of medicine and surgery. It indicated also the relative uses of potassium and soda salts, and suggested that where the object is to introduce iodine into the system the latter were preferable as being less poisonous in their action; but where a depressing effect was required the potassium salts would be more valuable.

Sir JAMES PAGET communicated a paper entitled "A Narrative of Additional Cases of Osteitis Deformans." It consists in the relation of seven cases of this disease observed by the author since the publication of his paper on the same subject in the 60th volume of the Transactions. They all confirm the description there given, and are adduced as further evidence that the disease to which the name is given has well-defined and distinctive characters, justifying its being regarded as a special form of inflammation of bones. This affection usually affects many bones, most frequently the long bones of the lower extremities, the clavicles, and the vault of the skull. The affected bones become enlarged and heavier, but so weakened, that those which carry weight or bear much muscular straining bend and become curved or misshapen. The disease is slowly progressive, giving rise to rheumatoid pain in the affected limb and increased heat in the tibia. These symptoms are not constant, nor felt in all the bones. Special disturbance of the general health attends this affection. In all the twelve cases, except the last, the disease has begun in persons over forty years old. There is no inherited relation to any disease except gout. The posture, general appearance, and movements of the patients have been alike in all the cases observed. They often suffice for the diagnosis.—Mr. BRYANT related particulars of two cases which had come under his notice since Sir James Paget's first paper was written. Both were females. The one was a lady, fifty-three years old, without children, who for years had complained of aching in the legs. Both tibiæ were greatly enlarged, and each femur so thickened and shortened that the trochanter was on a level with the anterior superior spine of the ilium. The iliac crest was also thickened, and the spine of the scapula. In sitting she supported her body by leaning forwards with her hands on the knees, and the head was persistently kept forward. Her father died from cancer of the neck, and one of her mother's cousins died from cancer. She was seen a year later more bowed, and six months later still with increased thickening. The other case was a lady, fifty-four years old, suffering from constant pain in the legs and inability to walk without crutches. She was married, and had one child, and was in good health till six years before, when she began to suffer from weakness and pain in the thighs. The knees were at least a foot apart; the trochanter was level with the iliac spine; the femora, tibiæ, scapulæ, and bones of the forearm thickened. One sister had died of cancer. In both these cases health was otherwise unimpaired; but in both the breathing was difficult, and the intercostal spaces nearly obliterated. Mr. Bryant added that a case of his mentioned by Sir James Paget in his first paper was still living.—Dr. BARLOW had a case under observation for three years, a woman, very rheumatic, with mitral stenosis, and liable to attacks of rheumatic purpura. She had pains in the arms, legs, and head. There was thickening, with bending of both humeri, radii, clavicles, and tibiæ; the head was very massive, and both upper and lower jaws were thickened. At the end of two years the pain became worse in the back. Abdominal tumours developed, and she died with sarcomata in several bones, the lungs, and abdominal viscera. There was no bending of the spine in this case; no vertebral anchylosis or hypertrophy of the vertebræ.—The PRESIDENT mentioned that in conversation Sir James Paget had said that he thought of adding a paragraph to his paper, giving his opinion that the disease was a new one, coupling it with a remark upon the possibility of evolution of new forms of disease. The pathological relations of the affection were most interesting, the frequent tendency to develop cancer or other malignant growth suggesting the presence of some yet unknown blood condition interfering with the nutrition of bones, and liable to lead to malignant disease. It differed essentially from true mollities, and the enlargement of the bones might be compensatory to the change in them effected by altered nutrition.

A paper was then read entitled "Notes of two cases of Malignant Pustule, together with a table of seventeen cases which have been treated at Guy's Hospital," by Mr. J. N. C. DAVIES-COLLEY, of which the following is an abstract:—In this paper the author has tabulated seventeen cases of malignant pustule, or charbon, which have occurred during the last nine years at Guy's Hospital, and he has given more fully the details of two which were admitted into his wards last year.—Case 1: F. R——, aged thirty-one, worked in a hide warehouse, and had been engaged for eight days with Australian fleeces. On April 10th, 1881, a small red spot appeared on his right lower eyelid; it grew rapidly. On the 15th he was admitted with the eye closed, and with a partly dry, partly vesicular eschar covering nearly the whole of the swollen lower eyelid. He was in little pain, but weak, trembling, and feverish. The glands were swollen. Immediate relief followed the excision of the eschar. In a few weeks the wound had healed, but the eyelid remained everted. Bacilli were found in the blood at the time of the operation.—Case 2: J. W——, aged thirty-nine, a tanner, had been handling foreign hides until July 2nd, 1881. He then left off work, and on July 6th noticed a red itching swelling on the cheek; it grew rapidly. On the 10th loss of appetite, and on the 11th he was admitted with a raised nearly circular patch of more than an inch in diameter in the middle of his cheek. The centre of this patch was slightly depressed, dry, and nearly black. The sides were covered with small, closely packed vesicles. There was swelling of the cervical glands and œdema of the neck. The eschar was excised, and chloride of zinc applied. He recovered rapidly. Appended was a coloured drawing of the charbon, and drawings of the microscopic sections of the eschar, showing the bacilli anthracis in the corium and round the hair-follicles. The author wished to call attention to the following facts:—1. Malignant pustule, or charbon, is not infrequent among tanners and wharf labourers, who have to handle foreign hides and fleeces. 2. It has not yet been observed at Guy's Hospital as a primary disease in the viscera, or in the form of malignant œdema of the integument. 3. It has been seen only on exposed parts of the body—e.g., the face, neck, and arms, the most dangerous position being the neck, probably from its vicinity to the larynx. 4. The seventeen cases were between the ages of eleven and forty-seven, and the majority were young adults of the male sex. 5. Twelve out of seventeen cases occurred in September and the four following months. 6. The disease may be confounded with malignant facial carbuncle, poisoned wounds, and primary chancres of the face. The chief points to notice are the painless character of the eschar, its vesicular margin, and slightly depressed and blackish centre. 7. The nature of the disease is not unfrequently overlooked, and its symptoms have been attributed to such causes as the bite of a mosquito, or the absorption of arsenic through an abrasion. 8. It should be treated at once by excision or free cauterisation. Out of fifteen cases in which the eschar was excised eight were already suffering from constitutional symptoms, and twelve had considerable œdema or glandular enlargement, yet nearly all recovered. The two cases in which excision was not performed were admitted with dyspnœa and other serious symptoms, and it is probable that in them the operation would not have averted the fatal result. (1) Swelling of the most superficial part of the cutis, with the formation of a ring of papules surrounding a zone of vesicles, at the centre of which is an eschar, is the earliest change recognised; (2) that

bacilli are present in these papules, but not beyond them, being (3) numerous in the tissue of the cutis immediately below the eschar, and above to its borders, and most abundant just below the Malpighian layer of the epidermis covering the outer part of the eschar.—The PRESIDENT remarked that the case mentioned in the paper of a dealer in hides who died, as was supposed, from a mosquito bite, came under his care. The gentleman had been bitten on the neck by a fly when attending the University boat race. Mr. Marshall saw him on the third day, when there was an inflamed swelling, without vesication, at the seat of the bite. There was diffuse cellulitis and rapid death from septicæmia. It was doubtful whether the bite was poisoned, or had been inoculated by scratching.—Mr. BRYANT testified to the value of the paper, for there was reason to think that the affection is not recognised as it should be. Charbon is quite characteristic, and unlike any other boil, carbuncle, or local manifestation of animal poison. Its early recognition is most important, for when it occurs in lax tissues (e.g., those of the neck), it may extend so rapidly that excision fails to save life. Thus, in one case, where he operated on the third day, the inflammation continued to spread, and death occurred from œdema of the glottis. There can be no question that the only success lay in early and radical extirpation by the knife, a practice far different from the measures formerly adopted, which consisted in stimulant and nourishing treatment, local applications, &c. He, therefore, advocated excision of the local lesion, even in doubtful cases. After the operation it might not always be necessary to apply such strong caustics as chloride of zinc; carbolic acid or other antiseptics might suffice.—Mr. DAVIES-COLLEY, in reply, pointed out that even in the case where there was surrounding inflammatory swelling and marked constitutional disturbance, the excision of the focus was successful.

The Society then adjourned until October.

OBSTETRICAL SOCIETY OF LONDON.

A MEETING of this Society was held on June 7th, 1882, Dr. Matthews Duncan, President, in the chair.

Twisting of Pedicle in an Incipient Dermoid Ovarian Cyst.—Mr. ALBAN DORAN showed a specimen of this condition. The patient, aged thirty-two, was operated upon for a cystic tumour of the left ovary, which reached two inches above the umbilicus, and proved to be dermoid. After its removal a tumour of the right ovary was discovered, also dermoid. Its pedicle was long and twisted, and entirely reduced to white fibrous tissue, all traces of its normal components being lost. The interesting clinical feature in the case was that the patient experienced an amount of pain and discomfort altogether out of proportion to the size of the tumours, and Mr. Doran thought that the condition of the pedicle of the smaller tumour was the true cause of these symptoms.

Accidental Removal of Uterus; recovery.—Mr. HOPKINS WALTERS (Reading) exhibited a Uterus with one Ovary and Fallopian Tube, and a piece of omentum, that had been torn away by a midwife in the attempt to remove an adherent placenta. The patient made an excellent recovery. He hoped at a future meeting to communicate a full account of the case.

Oöphorectomy for Uterine Fibroids.—Mr. KNOWSLEY THORNTON showed the Ovaries and Tubes removed from a woman, aged forty-four, to check hæmorrhage from uterine fibroids. The ovaries were enlarged and cystic, and the tubes were closed at their extremities, and full of semi-purulent fluid. They were buried in adhesions, so that the operation was difficult. The patient recovered. He had now removed the ovaries five times for fibroids, and once for fibro-cystic disease of the uterus. One of the former cases was only a partial success; in the others the hæmorrhage ceased, and the uteri in a few months became atrophic.—Dr. HEYWOOD SMITH had had a case in which during the first week after the operation the uterus shrank one and a half to two inches.

Uterus of Patient about to Menstruate.—Mr. WALTER GRIFFITH shewed a Uterus, with microscopic sections, taken from a woman aged twenty-nine, delivered five months previously, who died from hepatic abscess, having at the time of her death believed herself about to menstruate. The mucous membrane was thickened, red, infiltrated with blood, but not detached or degenerated. The sub-endothelial layer of the internal coat of the arteries of the muscular tissue was enormously thickened.—Dr. JOHN WILLIAMS remarked that this thickening was constantly seen after parturition.

Missed Abortion.—Dr. CAMPBELL POPE showed an Ovum and Placenta removed after dilatation of the cervix, in what, there was reason to think, was the eighth month after conception. The ovum presented the appearance of about six weeks' intra-uterine age.

Fibroid Tumour of Ovary.—Dr. CARTER exhibited a Tumour of the Right Ovary, weighing three pounds, which he had removed from a patient, aged twenty-nine. It was homogeneous in structure, consisting of fibrous tissue, with a varying amount of non-striated muscle. The tumour was wedged into the pelvis, reaching to within one inch and a half of the perineum, and there were ascites and œdema of the legs, which Dr. Carter ascribed to the pressure of the tumour. Drainage was used after the operation. The patient did well, and the dropsy rapidly passed away.—Mr. DORAN referred to a case, formerly reported, which was at first supposed to be fibroma, but subsequently ascertained to be sarcoma. The presence of ascites was in favour of the view that Dr. Carter's case was one of sarcoma. Pathologists were slow to distinguish between the spindle-shaped cell of sarcoma and the similarly shaped one of uterine fibro-myoma. It was reasonable to believe in the possibility of fibro-myoma of the ovary, but clinical phenomena, pointing to innocence or malignity, must be taken into account.

The Natural History of Dysmenorrhœa.—The adjourned debate on Dr. John Williams's paper on this subject was resumed by Dr. GERVIS, who, after expressing his admiration of Dr. Williams's paper, said that he thought dysmenorrhœa in single women was very commonly acquired. He agreed with Dr. Williams as to the beneficial effect of child-bearing, but thought that sterility was the rule. The statement with regard to the imperfect development of the uterus he thought was too absolute. Stricture of the uterine canal, either actual, from stenosis, or virtual, as from anteflexion or endocarditis, he had found extremely common. The most usual changes in the uterus in primary dysmenorrhœa were corporeal hyperplasia, endometritis, and endocervicitis; but many showed no evidence of secondary inflammatory disease. Ovaritis he thought a very frequent consequence. The statement that menstrual pain was the result of spasm he thought applicable only to cases in which there was obstruction. There were other varieties of menstrual pain dependent on uterine congestion and ovarian complications.—Dr. ROUTH thought that dysmenorrhœa was often acquired, and that it was most frequent in sterile women. In every woman the mucous membrane of the uterus was swollen at the beginning of menstruation, and obstruction might thus be caused which would not be detected by an examination made at any other time. Obstruction and pain often resulted from the presence in the flow of clots and membranes. Sometimes the uterus was morbidly sensitive in consequence of chronic inflammation, as in the condition he had called fundal endometritis. One case of dysmenorrhœa was what he would call retrogressive suction; secretions of the cervix or vagina being drawn up into the uterine cavity, and there exciting irritation and inflammation. This probably was the explanation of intermediate dysmenorrhœa. His principal objection to Dr. Williams's paper lay in his total disregard of uterine flexions and versions as causes of dysmenorrhœa. Sometimes the uterine cavity was twisted and bent in several different ways; such he had ventured to call a corkscrew uterus. There were other cases of "ball-and-socket" flexion; and these conditions were very powerful causes of dysmenorrhœa. He had seen cases which convinced him that the unimpregnated uterus could and did contract; and he thought that such contraction to overcome some kind of obstruction gave rise to the phenomena of dysmenorrhœa.—Dr. HEYWOOD SMITH regarded dysmenorrhœa as a symptom only. He thought that most women suffering from primary dysmenorrhœa were sterile. The changes in the menstrual flow were different according to whether the dysmenorrhœa were ovarian or uterine. In the majority of cases the uterus was of normal size. Erosion, eversion, catarrh, areolar hyperplasia, ovaritis, and perimetritis, he thought were causes, rather than consequences, of dysmenorrhœa. The accompanying hypertrophy he thought more often due to subinvolution. The kind of pain was different in uterine dysmenorrhœa from that in ovarian. Fatty degeneration of the decidua

was the natural means whereby it was broken up and loosened from its attachments.—Dr. GALABIN agreed with Dr. Williams as to the frequency with which shreds of membrane were found in the flow. He had repeatedly found entire uterine glands in these shreds. He thought the author went too far in ascribing menstrual pain universally to spasm, for he thus excluded congestive dysmenorrhœa. He (Dr. Galabin) believed that there was an active flux of blood to the uterus during menstruation, and that secondary dysmenorrhœa was commoner in single women than Dr. Williams had found it. There were many cases in which the primary pain was very slight, and it depended very much on the questioner whether the case were classed as primary or secondary. Intermittent pain was not necessarily due to muscular action. He thought the frequency of imperfect development of the uterus had been rather over-estimated. — Dr. CHAMPNEYS especially admired the method of the paper; the cases were observed undisturbed by topical experiments. This was a new departure. He could not agree that dysmenorrhœa was only a symptom, and should not be studied apart from the changes which produced it; for our knowledge of these changes was very scanty. He remarked the conspicuous absence of any solidarity between dysmenorrhœa and flexions.—Dr. RICHARD T. SMITH thought that the lithæmic diathesis was one of the most common causes of dysmenorrhœa, the pain being probably due to local congestion. He would be glad of an explanation of the fact that with an acute flexion menstruation might be painless for one or two periods, and subsequently, the local condition remaining the same, be very painful.—Mr. HOPKINS WALTERS (Reading) thought that acquired dysmenorrhœa in single women was very frequent, and was often due to sedentary occupations and constipation, which led to congestion, and subsequent secondary changes; and that such cases might often be relieved when treated in their early stages.—Dr. ROGERS thought that acquired dysmenorrhœa in single women was 1 quent. He could not agree with the author as to the frequency of clots or shreds, nor as to the rarity of stricture; and he believed that flexions and displacements played an important part in the production of dysmenorrhœa.—Dr. HAYES had found dysmenorrhœa chiefly associated with a conical cervix and a small external os. He believed this form of cervix was a continuation of the fœtal condition.—Dr. GODSON considered that everything depended on the character and severity of the dysmenorrhœa. In slight cases fertility was common, in severe ones rare.—Dr. JOHN WILLIAMS said his paper referred to primary dysmenorrhœa alone. Glands were found in the membranes expelled, although often their epithelium had fallen out. Dr. Savage's remarks as to the length of the broad ligaments did not explain cases in which the uterus lay close to the pelvic wall. He thought that pregnancy did take place in imperfectly developed uteri, and that such a condition was the cause of some abortions and premature labours. In the great majority of cases of dysmenorrhœa the os externum was well formed, and in some a No. 10 bougie readily passed into the uterus. He did not think that dysmenorrhœa was due to retention. The pain he believed due to spasm caused by a peripheral irritant, and did not think that in the great majority of cases stenosis had anything to do with it. Ovarian dysmenorrhœa was not included in the paper. There was no evidence that the menstrual flow was regulated by the ovaries. The changes referred to by Dr. Heywood Smith as causal could not have been present at puberty. He thought congestion had its place in some kinds of dysmenorrhœa, but not in that occurring at puberty. When ovaritis came on in consequence of dysmenorrhœa he thought the patients were generally sterile.

EPIDEMIOLOGICAL SOCIETY.

AT the meeting of this Society, held at University College, on Wednesday, June 7th, Dr. G. Buchanan, President, in the chair, a paper was read by Dr. ARTHUR RANSOME, on "The Form of the Epidemic Wave, and on Some of its Probable Causes." (1) The course of an epidemic through a country may be compared to a wave, rising and falling, again to rise after an interval, which in the same disease is remarkably regular. This occurrence of periodic times is probably due to the fact that a certain density of the population at the susceptible ages is necessary before a disease can spread with the vigour of an epidemic (see "Epidemic Cycles," Proc. of Lit. and Phil. Soc., Jan. 27th, 1880). (2) In some diseases, such as scarlet fever and whooping-cough, and perhaps small-pox, there is evidence in the 100 years or more of mortality returns from Sweden of more widespread variations in the course of these complaints; a variation of fifteen to twenty-five years in the case of scarlet fever, and of fifty years in whooping-cough and small-pox. No explanation could be given of these latter variations. In scarlet fever it was supposed to be due to the susceptibility of adults to this disease. The form of the epidemic was best to be studied by means of a regular registration of disease, such as was in use in St. Marylebone and Manchester, in Preston and Birmingham, and not from mortality statistics. From these data it was observed (3) that the curve of an epidemic is usually very irregular, and its oscillations were shown to be due (*a*) to the lighting up of fresh centres of infection, (*b*) to variations in sanitary conditions, and (*c*) to atmospheric influences affecting equally two distant places, the coincidence of curves in Manchester and London being very striking. (4) A pre-epidemic period of several months, or even two years, was found to exist in small-pox and scarlet fever, and a shorter period in whooping-cough and measles. This preliminary period was probably due to the need for the establishment of many distinct centres of infection. (5) A recrudescence of the epidemic was often to be found, and this was probably due to a fresh intensification of a previously attenuated virus; perhaps, in accordance with M. Pasteur's observations, in consequence of the deaths of very young or enfeebled persons. (6) The general form of the epidemic wave might partly be accounted for by the theory of infection spreading, like a spark in tinder; but it was more probably due to a steady attenuation of the virus in passing through a succession of individuals. (7) The preference of certain epidemics for different seasons of the year was usually to be explained by the prevalence of diseases at those seasons of organs chiefly affected also by the epidemic disease; a local predisposition to the disease was thus established, and we might thus explain the "epidemic constitution" of certain years, and the "pestilential type" of disease common during epidemics.

In the discussion which followed, the President, Dr. G. B. Longstaffe, Inspector-General Lawson, Surgeon-General Murray, Dr. Dickson, Surgeon-Major Don, and Dr. Scriven took part.

CAMBRIDGE MEDICAL SOCIETY.

AT the meeting on June 2nd (Professor Humphry, M.D., F.R.S., President, in the chair), Mr. HOUGH related a case of Retention of Fœtus during six years, and Removal of Bones through the Anus. The author observed that there were few cases in which the cause of extra-uterine fœtation could be determined, but that among the various conditions which had been supposed to produce it, the most probable appeared to be pelvic inflammation, which acted by inducing constriction and displacement of the uterine appendages. Many authorities recognised inflammatory adhesions, produced by peritonitis, as a cause, and several cases are recorded where peritonitis followed the confinement immediately preceding the extra-uterine pregnancy. It seemed that women who became pregnant, with the child in some abnormal position, had frequently shown a previous inaptitude for conception. The interval between marriage and the first impregnation was frequently long, sometimes nine, ten, or more years; and among women who had previously borne children, long intervals generally occurred between the last normal, and the extra-uterine conception. Probably some of the ordinary uterine displacements were occasional factors in its production; and cases were recorded of tumours so pressing on the uterine extremity of the Fallopian tube as to obstruct the escape of the ovum into the uterus. It was extremely difficult to state positively any one characteristic symptom of extra-uterine pregnancy. Some writers had laid great stress on violent spasmodic pain in the abdomen, recurring periodically; and, again, sanguineous discharge was thought to be important, but neither of these signs was to be depended upon. His patient was now twenty-nine years old, and had

been married twelve years. In September, 1874, she became pregnant for the first time, and menstruation ceased. Throughout January and February, 1875, she had more or less sickness, but did not come under observation till early in May, when she sent for Mr. Hough, on account of a slight discharge of clotted blood, and some pain. Labour appeared to be commencing, and she was recommended to keep quiet, and send for a nurse; no vaginal examination was made. In a few hours the pain abated, and the discharge ceased; at this time distinct fœtal movements were felt, and the fœtal heart was heard. She was seen from time to time till the autumn, but nothing calling for interference occurred. The shape of the body altered, the tumour being more to one side than previously had been the case, and the milk disappeared. In October she was seen by an eminent metropolitan surgeon, who diagnosed ovarian disease, and recommended her to take liquid extract of ergot, and after taking this for a fortnight the catamenia came on, and continued regular from that time to the present. For several years Mr. Hough lost sight of her, but at the beginning of the present year she consulted Dr. Humphry, who at once communicated with him about the case. At this time the great pain from which she suffered rendered further examination necessary. Ether was administered, and on examination per rectum, a large cavity, in which the bones of the fœtal head could be felt, was discovered, and one by one Dr. Humphry extracted the fœtal bones through the opening in the bowel, by the finger. The patient did extremely well, and at the present time no trace of the cavity remains, and she is in perfect health.

Dr. HUMPHRY gave an account of an almost precisely similar case. The patient, aged twenty-four, had been married about a year, when the catamenia ceased, and the breasts and abdomen began to enlarge, and for a time there was morning sickness. At full time the symptoms of labour (recurring pains, with coloured discharge) came on. The labour being unusually protracted, the midwife in attendance sent for Mr. Ramsay of Shelford, and stated that the patient had been in labour two days and nights and that the pains had ceased. On examination Mr. Ramsay found the os closed, the neck of the uterus small, hard, and firm, quite unlike that of an impregnated womb at full term. The enlargement of the abdomen was greater on the right side than the left, and did not present the oval outline of the gravid uterus. The pains returned at intervals of a week or ten days for two months. She then became an in-patient under Dr. Humphry's care in Addenbrooke's Hospital, complaining at this time of constant pain in the lower part of the body, and of a blood-stained, somewhat offensive discharge from the vagina. On examination, a swelling was found occupying the lower part of the abdomen, and extending from the symphysis pubis to about half an inch above the umbilicus, which was dull on percussion. The os and cervix uteri were as in the ordinary unimpregnated condition and so undilatable that it was found impossible satisfactorily to explore the interior of the uterus. During her stay in the hospital two fœtal nails were passed per vaginam. At the expiration of five weeks she was discharged *in statu quo*. Two months later she complained of severe abdominal pain and had a rigor, and in the course of a few days began to pass fœtal bones per anum, a large number being discharged in this way, but not all the bones of the skeleton. From that time the woman began to regain health and strength, and the catamenia had since been re-established. Dr. Humphry had recently examined the patient; there was still a firm swelling in the pelvis, containing probably some bones, but nothing could be discovered by the finger in the rectum or vagina. In both cases the question arose as to the position of the fœtus. It was believed by some that the retained fœtus was always extra-uterine, never in the cavity of the uterus itself. In his own case it was quite certain that fœtal nails, as well as offensive discharge, were passed by the vagina, and if the fœtus were extra-uterine it was difficult to understand how this could happen. With regard to the formation of the decidua, he exhibited specimens from the Cambridge Museum, prepared by Dr. R. Lee and Dr. Clark, which showed that when the fœtus was developed in the ovary, or distal part of the Fallopian tube, none was present in the uterus, but when the impregnated ovum was arrested in the proximal part of the Fallopian tube, or in the wall of the uterus itself, a decidua was present. Dr. Parry, on the other hand, expressed in his work the belief that it always existed during the early stages of extra-uterine pregnancy, but was often expelled in the later stages, and this author had shown that the uterus underwent changes similar in almost every respect to those which accompany normal pregnancy. The important practical lesson to be deduced from these two cases and others like them which have been recorded, was that the result is often favourable when they are left to themselves. The chief dangers were in the earlier stages of extra-uterine fœtation; but when the later stages were reached, the prognosis was on the whole good. In speaking of the changes which the fœtus undergoes when it is retained, Dr. Humphry mentioned a specimen, in the museum of the College of Surgeons, taken from a woman who died at the age of ninety. The fœtus, which had been retained fifty-three years, had apparently undergone no alteration, the softer parts being all preserved, and looking like those in a fœtus only recently dead.

Dr. BRADBURY exhibited one of his hospital patients, a man aged twenty-eight, who had been hemiplegic for about ten months, probably from some syphilitic lesion of the brain, in whom ankle-clonus was extremely well marked.

Mr. WALLIS showed the Carotid Artery and Aorta of a man who died six days after the application of a ligature on account of profuse hæmorrhage from cancerous disease of the mouth and tongue. Two days after the operation hemiplegia on the right side supervened. Hæmorrhage occurred on the fourth day. At the post-mortem examination a slightly mottled clot, to all appearance ante-mortem, was found in the cerebral portion of the internal carotid, and in the middle cerebral artery, on the left side. Below the ligature a clot existed which was continuous with a very large clot in the aorta, the walls of which were very atheromatous. The clot in the aorta seemed to have formed, in part at any rate, during life, probably during the period which just preceded death. These appearances were of some interest in connexion with the operation of ligature of the carotid for aneurism of the arch of the aorta.

Dr. BACON showed the Foot of an adult, a tailor by trade, the subject of talipes equinus. The tendons and fasciæ had been dissected to display the alteration they had undergone, and a careful section in the antero-posterior plane had been made by Dr. Anningson, with a view to showing the changes which had occurred in the articulations.—Dr. HUMPHRY said that he had not before seen any such section of a club-foot. Owing to the preternatural flexion, it would be seen, by attentive examination, that the tibia rested on the posterior part of the trochlear surface of the astragalus, while the anterior part, pressed upon by the stretched anterior ligament of the ankle-joint, was completely denuded of cartilage. The associated flexion in the foot in these cases took place almost always between the astragalus and os calcis behind, and the scaphoid and cuboid in front, and in this specimen the scaphoid was in contact only with the under part of the ball of the astragalus, and the upper part of the ball, pressed upon by the superior calcaneo-scaphoid ligament, was, like the forepart af the trochlea, quite devoid of cartilage. In the Chinese foot, in which a somewhat similar flexion is artificially produced, the bend is made at a point anterior to this—namely, in the metatarsal bones, which are so bent that the toes come almost into contact with the heel, and the tarsal bones are made prominent anteriorly.

Reviews and Notices of Books.

A Practical Treatise on Materia Medica and Therapeutics. By ROBERTS BARTHOLOW, M.A., M.D., Professor of Materia Medica and General Therapeutics in the Jefferson Medical College of Philadelphia, &c. Fourth Edition, Revised and Enlarged. London: H. K. Lewis. 1882.

THAT a large treatise on materia medica and therapeutics should run through four editions in little more than as many years is the best testimony to its value. Dr. Bartholow explains that engagements admitting of no postponement have prevented the appearance of this volume at an earlier date. Meanwhile progress in therapeutical science has been active, and it has been found necessary to entirely rewrite many of the subjects. Several important additions have been made, and articles are for the first time inserted on barium, nitro-glycerine, curara, muscarine, and resorcin.

Under the head of Nitro-glycerine an admirable account is given of the preparation, properties, and physiological action of this valuable remedy. It has been used with success in angina pectoris, spasmodic asthma, neuralgia, megrim, gastralgia, and obstinate hiccough, and a trial is suggested in whooping-cough, laryngismus stridulus, and tetanus. "There is much," says Dr. Bartholow, "to be expected from nitro-glycerine in diseases of the nervous system characterised by heightened reflexes. An attack of epilepsy may be aborted by its timely administration. By preventing the spasm of the vessels and consequent sudden anæmia of the brain, the first and most important event in the series cannot occur." Respecting the dose our author speaks with praiseworthy discretion. He recommends of the one per cent. solution "from one to many minims." He is quite right; the action of the drug varies so much in different individuals that it is impossible to lay down positive rules on the subject of dosage. Some people suffer intensely from a single dose of a six-hundredth of a grain, whilst others will take a grain of the pure drug two or three times a day without the slightest inconvenience.

Muscarine or muscaria, the alkaloid of amanita muscaria, or fly fungus, has long been known to physiologists, and now promises to be a valuable addition to our list of remedies. It should be extracted from the fungus, but is frequently prepared synthetically, although there is good reason to believe that the artificial substitute is almost inert. The best test of the activity of any given specimen is its power of arresting the frog's heart, and of being antagonised by atropine. Dr. Bartholow considers that it is of much value in the treatment of many disorders of the digestive organs. "When constipation is due to paresis of the muscular layer of the bowel, and to deficient secretion, this remedy will probably relieve it. In the treatment of intestinal torpor and deficient secretion muscaria may be combined with other remedies, as atropia and strychnia, which act on the organs concerned, or with cathartics and cholagogues: ℞ Muscarinæ, gr. iv.; extr. belladonnæ, extr. nucis vomicæ, aa gr. iii.; euonymin, 5ss. M. ft. pil. No. xii. Sig. One pill night and morning. When the digestion of the starches and fats is imperfect it is strongly indicated." We must confess that we know of no good clinical evidence that can be adduced in support of these statements. Muscarine has recently been introduced as a remedy for the night-sweating of phthisis, but surely Dr. Bartholow is not correct in stating that the fly fungus was commended by Trousseau for this purpose. In the eighth edition of the "Traité de Thérapeutique et de Matière Médical" of Trousseau and Pidoux an account is given of the Agaric blanc (Boletus laricis), but we find no mention of the Agaric mouche (Agaricus muscarius), which is quite a different species.

Resorcin, which of late has attracted considerable attention as an antiseptic and antipyretic, is fully described, special prominence being given to the observations of Dujardin-Beaumetz, Andeer, Lichtheim, and other recent writers. It is strongly recommended in the treatment of typhoid and typhus fevers, erysipelas, septicæmia, and diphtheria. The ordinary dose is from fifteen to thirty grains. This may be given with safety, but the large quantities administered by some German authorities should be prescribed with caution. It ought to be remembered that much of the resorcin met with in this country is impure, being largely contaminated with carbolic acid and perhaps with arsenic. Care should be taken to obtain the drug as pure as possible.

The article on Picrotoxine, the active principle of cocculus indicus, has been entirely rewritten and much extended, so as to include an account of the observations of Planat, Rammond, and others, on the value of the drug in the treatment of epilepsy, chorea, paralysis agitans, paralysis of the sphincters and allied conditions. An account, too, is given of its use in the treatment of the night-sweating of phthisis, but no mention is made of its employment as a remedy for the persistent vomiting from which patients in the last stage of consumption so frequently suffer. The dose is 1-60th of a grain, and it may be given either in solution or made up with sugar of milk into a pill.

A good account is given of pulsatilla, phytolacca, and several other new remedies, but curiously enough the hamamelis virginica, or American witch hazel, is dismissed in half a dozen lines.

Under the head of Apomorphia (p. 551) it is stated that "as it undergoes important changes when in contact with water, the solution for hypodermic use should be made when required." It would certainly be an advantage if every solution intended for hypodermic use were freshly prepared, but no special caution is needed in the case of apomorphia. The solution speedily assumes a green colour when exposed to the light, but its physiological action remains unaltered. We have frequently employed a 1 in 50 solution of chloride of apomorphia prepared at least three months previously, and have never failed to induce prompt and copious vomiting by a hypodermic injection of from two to five minims. It should be remembered that one of the chief uses of apomorphia is to empty the stomach in cases of narcotic poisoning, and if it were necessary to prepare the solution at the time, it would soon be superseded by other and more convenient emetics.

Although we have taken objection to certain statements made by Dr. Bartholow, it must not be supposed that the work is untrustworthy—on the contrary, the very greatest care has been taken in its preparation, and we have no hesitation in saying that it is one of the best books on the subject that has yet appeared, and it will undoubtedly add much to the author's already deservedly high reputation.

OUR LIBRARY TABLE.

Mechanical Dentistry. By CHAS. HUNTER. Second Edition, revised, with additions. London: Crosby Lockwood and Co.—It is just as impossible to learn mechanical dentistry "by the book" as it is to learn anatomy without dissections, and the Colleges of Surgeons have done well to insist in their curricula that candidates for the L.D.S. shall spend three years in the actual practice of mechanical dentistry, in addition to attending lectures on the subject. It is only fair to Mr. Hunter to say that he has produced a most efficient manual, written in clear and graphic style, amply illustrated and well printed. That it has reached a second edition in a comparatively short time shows that it is appreciated generally; but many of the most modern improvements in the manipulation of vulcanite, celluloid, and continuous gum are omitted, perhaps because they are still on their probation. The book does not contain much of interest to the medical profession in general, being intended of course for the dental branch of it; but there is little doubt, that a surgeon intending to practise in some remote part of the colonies, where dentists are few and far between, might find it useful to have the knowledge of mechanical dentistry which this book would furnish. With regard to the section on the treatment of congenital cleft palate, Mr. Hunter does not insist sufficiently on the great advantage which mechanical treatment has over surgical, in the majority of cases, especially when operation has been delayed unduly. There is no doubt whatever that a properly made and well-fitted plate will restore the functions of deglutition and articulation far better than an operation, which puts the soft palate on the stretch, and prevents it reaching the back of the pharynx when necessary. Finally, Mr. Hunter would also do well to point out the great advantage

of having a special zinc or pewter tray made for the majority of cases, instead of only in exceptional ones, as recommended in his book, and always for taking the impressions of cleft palates.

Essentials of the Principles and Practice of Medicine. By HENRY HARTSHORNE, A.M., M.D. Fifth Edition. London: Smith, Elder, and Co. 1881.—The author of this book seems to have spared no pains to bring it up to the modern standpoint, for as we turn over its pages we find many subjects introduced which have been only lately brought before the profession. Certainly, amongst books of its class it deserves and has obtained a good position, although we should like to see some of the pathology rewritten and many of the woodcuts replaced or wholly removed from the text. There are some matters which are very difficult to illustrate, and no subject is the clearer for being badly illustrated. Dr. Hartshorne is careful to quote authorities for many of his statements, and, if anything, errs in being over-scrupulous in this respect, for multiplicity of names in a text-book rather tends to bewilder the student. On the whole it is a careful and conscientious piece of work, and may be commended to the notice of students.

Consumption: a Reinvestigation of its Causes. By C. W. DE LACY EVANS, M.R.C.S. London: Baillière, Tindall, and Cox.—The aim of this *brochure* is to show that we are all wrong as to the cause of the formidable disease upon which it treats. The author, arguing from the leading symptoms of phthisis, arrives at the conclusion that the process is due mainly to an excess of atmospheric oxygen acting upon the tissues. This being so complete a reversal of all our "preconceived" notions, and of the teachings of pathology, we cannot undertake to refute it here; meanwhile we refer those who are interested to the book for the curious therapeutical results that accrue from the adoption of the writer's theory.

The Sun. By C. A. YOUNG, Ph.D., LL.D., Professor of Astronomy in the College of New Jersey. London: Kegan Paul, Trench, and Co. 1882.—This volume gives an accurate and interesting account of what is known about the constitution of the sun and solar phenomena. The methods and apparatus, by means of which the results have been obtained, are also described. The different modes of determining the sun's distance and dimensions are explained with great clearness, and exceedingly apt illustrations are given of the sun's immensity. The distance of the sun being determined, its volume and mass are computed, and from these its average density is found to be only about one quarter that of the earth. The revelations of the spectroscope are detailed, and prove that the same elements which are found on the earth exist in a state of vapour in the solar atmosphere. This fact and the low density support the supposition that the sun is composed of incandescent gas, powerfully condensed by pressure at the central part and prevented from liquefaction by the high temperature. The constitution of the photosphere and chromosphere is discussed with great precision and lucidity. They are shown to be phenomena which we would expect to observe at the surface of such a ball of vapour exposed to the cold of space. There seems little doubt that the photosphere is a shell of clouds formed by the condensation of iron and other metals. The author defines "the photosphere as the shell within which precipitation is taking place, the reversing layer as that lower region of the sun's atmosphere which contains sensibly all the gases which the spectroscope indicates to us; the chromosphere as the region of hydrogen." The remarks on the nature and periodicity of sun spots and their effects upon the earth are remarkably suggestive, and are characterised by the same clearness of expression which pervades the whole book. The author considers that the periodicity and distribution of the spots and the constitution of the corona are problems still unsolved. This excellent work will be of interest and value to those interested in scientific subjects, as well as to those who make science their special study.

The Hair; its Treatment in Health, Weakness, and Disease. By Dr. J. PINCUS, of Berlin. London: Chatto and Windus. 1882.—This cheap but well got-up little work of seventy pages, by one who is well known for his painstaking labours on diseases of the hair, is evidently addressed mainly to the public, and contains a clear popular outline of the anatomy and physiology of the hair, followed by directions for its management, and by some account of diseased states and their treatment. The description of diseased states is in many cases very meagre—e.g., with regard to the diseased conditions due to fungus,—and some affections are not alluded to. Dr. Pincus is very careful to suggest only such remedies as may be safely adopted by the general public without reference to a medical man, and he repeatedly insists that only a qualified practitioner can properly carry out further measures. We have only to say, in addition, that the means of treatment recommended by Dr. Pincus, like many other of the views expressed, are quite original and the result of many years' careful observation.

Ringworm, its Diagnosis and Treatment. By ALDER SMITH, M.B. (Lond.), F.R.C.S., Resident Medical Officer, Christ's Hospital, London. Second Edition, rewritten and enlarged, with illustrations. London: H. K. Lewis. 1882.—The rapid exhaustion of the first edition of this sound, thoroughly practical, and handy little book sufficiently attests what a troublesome and frequent disease ringworm is, and how much the book is appreciated. In issuing a second edition, Mr. Smith has by careful revision and the rewriting of passages striven hard and successfully to present the subject in the most concise, clear, and practical manner, and this is especially the case with regard to the diagnosis and indications for treatment. We almost regret, however, that the book has been enlarged to double its former size, though we notice this is to some extent owing to the addition of two plates of alopecia stumps, and one of a ringworm hair, to the introduction of many excellent formulæ and a good index, and a discussion of some new remedies.

"GENERAL GARIBALDI'S ANKLE-WOUND."

To the Editor of THE LANCET.

SIR,—In connexion with your very interesting annotation in THE LANCET of last week on the above subject, I may mention one circumstance which is, perhaps, not generally known. When, after the failure of Mr. Partridge to detect the presence of the bullet, M. Nélaton was summoned to see the wounded General, he left Paris with some misgivings as to his being more successful than the well-known English surgeon. Before starting, however, on his mission he went to M. Charrière, and asked him if he could not devise something with which he could not only detect the presence of the bullet in the wound, but to show by ocular demonstration that it was there. M. Charrière thereupon set his inventive faculties to work, and I have it on good authority that to him is due the idea of the porcelain tipped probe which M. Nélaton employed with signal success. I mention this circumstance not with the view of detracting from the merits of the great surgeon, but I think every man should have his due, and that we ought to render to Cæsar that which is Cæsar's. The invention of the instrument is due to M. Charrière, the great instrument-maker, and its successful application to M. Nélaton, the great surgeon, both of whom have since retired to their long rest, and so, indeed, have the principal agent and the other actor in the drama.

The success of M. Nélaton was here looked upon not only as a great triumph over British surgery, but as a national victory.—I am, Sir, yours obediently,

Paris, June 19th, 1882. AN OLD PRACTITIONER.

THE LANCET.

LONDON: SATURDAY, JUNE 24, 1882.

THE recent decision of the Council of the Royal College of Surgeons no longer to enforce a compulsory attendance on Anatomical Lectures during two winters has, as we anticipated, produced a great consternation among the teachers at the various medical schools. The passing of the resolution was thought by them to be so improbable that they can even now hardly believe in its reality. They condemn it with absolute unanimity, and a meeting of the lecturers on anatomy was held at the Middlesex Hospital on the 22nd inst. to make a formal protest to the Council of the College, and urge them not to confirm the resolution. The only argument that we have heard in its favour is the singular one that, as the College does not compel attendance on more than one course of lectures in any other subject, there is no reason why anatomy should not be placed in the same position. It is also rumoured that one of its supporters gravely suggested that the course should be given in the *second* winter session; as if the newly entered student was at once over-worked, had too many lectures to attend—viz., anatomy, physiology, and perhaps chemistry four times a week,—and required no guidance and no systematic instruction. We can scarcely believe that a member of the Council really holds such preposterous ideas on the value of systematic teaching and training for the medical student. Let us see what the effect of the new regulation will be. In the first place, the most energetic and assiduous of our lecturers on anatomy all say that it is quite impossible for them to illustrate and put before their class the subject of human anatomy, in its entirety and as it should be viewed by the medical student, in the time at their disposal during one winter. In some cases the anatomical students have been divided into an elementary and an advanced class, with increased labour to the teacher, but unmixed advantage to the learner. In such a case, must the teacher fall back into the old system of mere text-book lecturing, demoralise his hearers, and prejudice them against scientific training in general, and his own subject in particular?—for this is the science that most of them will first have come into real contact with. In other cases, lectures on definite portions of the body—the brain and special senses, for example — are only fully given, owing to want of time, every second year. Is the student in this case to be deprived of his teacher's guidance, perhaps research, and be driven to mere cramming from text-books for his knowledge, or even do without it altogether? In the alternative case, if any such remains of a bygone generation still survive as lecturers, where the student has merely to listen to a dreary repetition of his familiar manual, occasionally referring thereto to assure himself that the lecturer's memory is not betraying him into an erroneous statement, surely the question is one for the authorities of the school and not for the Council of the College. Can it really be that recollections of this kind have determined the voting? We can only see unmixed evil in the adoption of the resolution. The student who is anxious to learn will attend a second course if his teacher is able, as every good teacher should be, to infuse some vitality into the subject, whilst every idle student will have an additional excuse for idleness; a severe blow will be struck at the proper discipline of the school and the judicious training of the pupil. The half-taught student of one winter will cram, cram, cram during the next for the primary examination; and this vicious system, which in our experience the examinations of the College of Surgeons mainly develops and fosters, will gain increased strength. The Council of the College of Surgeons, a few years ago, abolished compulsory attendance on physiological lectures during the second winter session. Before performing the same operation on anatomy, they would do well to ask the opinion of the best teachers of physiology as to the wisdom and effect of their former regulation. The fact seems to be, that the College authorities have no consistent scheme of medical education to offer the student for his guidance; but one member of the Council now, and another then, is always trying his hand on some petty detail, without any regard to the broader features of the subject. The result is only a want of confidence on the part of the profession and the students, a constant worry to the teachers, and piecemeal legislation of which it is impossible to find the motive which inspires it or the object for which it is intended. The reasons assigned by the Visitors of the General Medical Council for the large number of rejections at the College should instigate the Council to reconsider their system of examination before setting to work to alter the regulations which govern the pupil's course of study.

THE facts and opinions which point to the infective nature of tuberculosis involve the assumption that, as regards man, the disease may arise by the inhalation of the morbific germs with the inspired air. The experiments which have in a few instances been carried out, on the artificial production of tuberculosis by the inhalation of the virus, have acquired additional importance from the recent discoveries, and it is not surprising if the attention of investigators is more and more directed to this question. The chief observations on the subject hitherto made have been those of TAPPEINER, who endeavoured to produce the disease by the inhalation of the atomised sputa of tubercular patients. Of eleven dogs subjected to experiment, all, with one doubtful exception, presented miliary tubercles in the lungs, which were found also in several cases in the kidneys, and in some also in the liver and spleen. The earliest distinct tubercular eruption was found in the course of the third week, from which he inferred an incubation period of rather more than fourteen days. SCHOTTELIUS suggested that these experiments did not furnish conclusive evidence regarding the specificity of tubercle, since he succeeded in producing similar nodules in the lungs of dogs by the inhalation of various organic substances, sputum of non-tubercular persons, cerebral tissue, and even cheese. He left it undecided whether all the nodules in the lungs were true tubercles, but his experiments have at any rate this bearing on human phthisis, that the inhalation of organic substances can produce foci of disease in the lung.

TAPPEINER, on this, renewed the investigation. He made an emulsion of calf's brain in water, and caused two dogs to inhale the atomised liquid, but found no nodules in the lungs. He explains the difference between his results and those of SCHOTTELIUS by the difference in the conditions of the experiments. BERTHEAU repeated TAPPEINER'S experiments, and obtained the same results, failing with a cerebral experiment with non-tubercular sputum.

Fresh experiments on the subject have been lately made by WEICHSELBAUM of Vienna, dogs alone being employed. Eleven experiments were made with tuberculous sputum. The duration of the experiments varied between two days and two and a half months, and the number of inhalations between one and twenty-four. In all these cases, even in those in which only one inhalation had been administered, and the animal had been killed one or two days afterwards, tubercles were found in the lungs and kidneys, many in the former, one or two only in the latter. Moreover, the bronchial glands, and in some cases the mesenteric glands also, were swollen, and presented tubercles under the microscope. In the two cases in which the animal was killed one and two days after the first and only inhalation, the tubercles in the lungs were few and scarcely visible; but in another case, eight days after the inhalation, the tubercles, although small, were very abundant. They were non-vascular, and consisted partly of lymphoid cells, partly of cells which were larger, and flattened by mutual pressure. In the lungs desquamative pneumonia was present in places. In the centre of the larger tubercles caseation was already commencing.

In three other experiments a watery emulsion of triturated cheese was employed in the same manner. In two, in which a strong-smelling cheese was used (Limburg cheese), the animals died, one in a month, after six inhalations, the other after two inhalations in the course of five days. The cause of death was a gastro-enteritis, and no trace of tubercle could be discovered. In the third case, however, in which mild cheese was inhaled fifteen times in the course of seventeen days, twenty-four small nodules were found in the two lungs, and one submiliary nodule in each kidney; these nodules had a similar structure to those found in the other cases. For the sake of comparison an injection of similar cheese emulsion was made into the peritoneal cavity of two other dogs, but in neither was any trace of tubercle discovered. The same negative result followed the injection of cooked tubercular sputum, whereas this, injected in the fresh state, caused a copious eruption of tubercles in the mesentery and in the large omentum. Experiments were also made with the inhalation of other substances. Pus from a carious rib, diluted with water, was inhaled for seven weeks, but only a few nodules were found in the lungs, although these had a structure similar to the tubercles of the first series. Lastly, a dog was made to inhale, sixteen times in the course of twenty days, an emulsion of fresh bullock's spleen, but no nodules were found in its organs. These experiments seem to show that tubercle-like formations may be induced by the inhalation, not only of tuberculous material, but also of other organic substances. The results, however, differ from those of SCHOTTELIUS in that a difference in the action of the two classes of material was clearly shown. The tubercular sputum contains a virus which, in whatever quantity or whatever mode it is introduced into the organism, produces, without exception, numerous nodules which have the structure of tubercle. Other organic, not tubercular, substances either do not produce these at all or produce them in only insignificant quantity. Full knowledge of the mode in which the tubercle arises can only be obtained when we know to what constituents of the tubercular sputum, cheese, &c., the special effect is to be ascribed. According to these experiments the incubation period of tuberculosis produced by inhalation is much shorter than was assumed by TAPPEINER, since apparently it may not exceed one day. This extremely brief interval, indeed, will cause many persons to hesitate before accepting the results of the experiments as altogether trustworthy.

The same subject has been investigated in France by M. GIBOUX, and in an aspect of more direct practical importance. The nocuity or innocuity of the air expired by phthisical patients was the point examined. He collected daily forty or fifty litres of air expired by persons in the second or third stage of phthisis, and passed half this air into a hutch in which were two young rabbits born of perfectly healthy parents. Two other similar rabbits were confined in another cage of the same construction, and through this was passed daily twenty or twenty-five litres of the remaining air, but which had been filtered by being passed through tow impregnated with carbolic acid. The two cages were placed in separate rooms so as to prevent any contamination of the air of the one by the respiratory products from the other. The experiment lasted from January 15th to April 29th. At the end of this time the two rabbits placed in the second cage were in perfect health, while the others presented loss of appetite, thirst, diarrhœa, and emaciation. At the autopsy tubercles were found in the principal viscera, and the lesions in the lungs were much more advanced than in the other organs. On the other hand, the viscera of the two rabbits in the second cage presented no trace of tubercle.

Of course, as is pointed out by the *Gazette Médicale de Paris* in a comment on GIBOUX'S investigations, the experiments do not demonstrate that the air expired by phthisical patients is as noxious to man as it appears unquestionably to be to some, at least, of the lower animals. Nevertheless, these facts are of great importance, and receive additional significance from the discoveries of KOCH. They harmonise also with the cases, rare it may be, but well established, in which phthisis seems distinctly to originate in long-continued attendance on a person suffering from the disease. They raise, moreover, another question of very great practical importance. What is the effect of massing together consumptive patients in the wards of special hospitals for the disease? If the air which has been breathed by these patients manifests, by its effects, the presence of the virus of the disease, its comparative innocuity to persons in health must be due the difficulty which the germs find in gaining an entrance through the uninjured tissue of the lungs, or to the unsuitability of the soil into which they penetrate. But these conditions do not obtain in those who are already the victims of phthisis. The suitability of the soil is demonstrated, and the lungs are no longer in a normal state. Is not the chance of recovery of such cases lessened by the

constant renewal of the morbid stock of tubercular germs? No positive answer to the question can be given, but it is one which deserves most careful consideration, and observations directed to this end may soon supply at least an indication of the quarter in which an answer is to be sought.

THE recent scandals in connexion with private dispensary practice at the East-end of London, and which it is to be feared too well represent the same kind of practice in other parts of London, have come happily to light. We gladly published last week the letter of Mr. MURDOCH, the principal concerned, calling attention to the fact that he had never authorised anyone to sign a certificate of death. He himself, however, now admits his conviction of the danger of entrusting practices to the charge of unqualified men, who, according to common experience and the disclosures of this case, take almost the exclusive care of cases till impending death dictates the wisdom of a visit from the qualified principal—not in time to direct treatment, but simply to protect the agent, whose very name is sometimes a mystery to the poor people whom he visits, but who is often understood throughout to be the principal himself. Thanks to the coroner's inquest, and the other also much-abused but very useful institution — the right of questioning responsible members of the Government in the Houses of Parliament,— this system has now been pretty fully exposed. It will be the fault of the public authorities if the scandal is not abolished, and if the public are any longer deluded with names, brass plates, titles, sign-boards, and other devices which falsely imply the residence of a person qualified by law to treat disease. Fraud in such matters is the very worst kind of fraud. To permit people, generally poor people, to be deceived in their moments of agony and disease is cruel. If they choose, with their eyes open, to prefer ignorant and unqualified persons, that is their look-out. But to allow such persons to assume the titles and airs of registered and qualified practitioners is to neglect one of the first duties of Government.

But here we come to the difficulty. In a Government like ours there is so much distribution of duty that it is difficult to assign responsibility; so that when a great public evil is exposed one authority relieves itself at the cost of another, and the public suffers. This scandal of illegal practice has been shifted from one pair of shoulders to another, till at last it has become intolerable. Juries and coroners, who are brought into close contact with the painful results, are beginning to pass such verdicts as cannot much longer be ignored. Mr. H. B. SAMUELSON, the member for Frome, did a great public service in asking the Home Secretary if he meant to take any steps in reference to the working of dispensaries by unqualified assistants. The Home Secretary recommended an appeal to the Medical Council, which, he said, had the power of dealing with such questions under the Medical Act. We do not doubt that the Medical Council has much more power to deal with this evil than it has ever exercised. But the Council has another power, which the Home Secretary is evidently unacquainted with—that of urging excuses for disregarding all the representations which are made to it of the extent of illegitimate practice, and of treating such matters as none of its business. It is easy to say that the Council itself could not undertake to prosecute cases of false pretence to registration and qualification. But as the great authority presiding over the registration and the education of medical men, it would surely have been reasonable that it should have manifested more concern at the extensive deception practised on the public by those who are not on the Register. If it felt itself debarred from initiating and carrying through prosecutions, it could easily have moved the Public Prosecutor to do so. And in so moving him it would have pleased alike the public and the registered practitioners of the country. It has always had the most happy conviction that it had nothing to do with the matter. The Home Secretary says it has. Either he or the Council is wrong. His remarks at any rate throw a great responsibility on the Council, which ought to be pressed on it at the approaching meeting. If the Council has not the power to take notice of unqualified practice or of those registered practitioners who make use of unqualified assistants to work half a dozen independent practices, the moment is most opportune for making this clear, and for giving larger powers to any new Council that may result from the labours of the Royal Commission. At the very least it should have, and should be required to exercise, the power of asking the Public Prosecutor to undertake the prosecution of cases where the public are deceived by pretensions to registration. Surely the Medical Defence Associations will not fail to press this opinion of the Home Secretary on the Medical Council at its coming meeting.

IN the last number of the *Archiv für Gynäkologie* (Band xix., Heft 2) is a contribution by Dr. VEDELER, of Christiania, on Displacements of the Uterus, in which the author brings forth evidence on a large scale, which must contribute materially to the formation of an accurate estimate of the part taken by such conditions in the production of symptoms. Dr. VEDELER has examined not only women who complained of pelvic troubles, but women who appeared, and stated themselves to be, perfectly healthy, and in whom no disease could be found. All women who complained of pelvic trouble, or in whom erosion, perimetritis, or tenderness around the uterus was discovered, were classed among the sick. The total number examined was 3012; of these 18 suffered from prolapsus, and will not be further referred to. Of the remainder, in 15 per cent. the uterus was in the so-called normal position, in 12 per cent. it was anteverted, in 10 per cent. retroverted, in 54 per cent. anteflexed, and in 8 per cent. retroflexed. So that of 3012 women of the menstrual age, and of all conditions, single, married, &c., anteflexion was present in more than half the whole number. Again, 466 of the number were virgins, 740 nulliparous, 322 were from two to three months pregnant, and 1465 mothers.

Of the 466 virgins, 52 were suffering, and 414 enjoyed good health. The percentage of those in whom the uterus was found in the various positions which it may assume was much the same in the healthy as in the suffering; but it is curious and important to note that the so-called normal position was met with in only 7 per cent. of the healthy, while it was found in 6 per cent. of the complaining; anteflexion, however was found in 71 per cent. of the healthy, and in 70 per cent. of the ailing.

In healthy nulliparous women, the normal position was found in 9 per cent. only, and anteflexion in 71 per cent.; in nulliparous women who complained of pelvic symptoms, the normal position was found in 15 per cent. and anteflexion in 56 per cent. only. Here the normal position obtained considerably more frequently, and anteflexion considerably less frequently, in the diseased than in the healthy state. Anteflexion of the uterus was found in 68 per cent. of all single and nulliparous women—the total number examined being 1215. This is a higher estimate than that of some other authors; the mean estimate of seven observers (431 cases observed) being 43, while HERMAN'S estimate is 48 per cent. (111 cases examined). The number examined by VEDELER, however, is so large that his results are probably less liable to accidental error.

In those who were mothers the percentages of the various positions were somewhat altered, the normal position being met with in 22 per cent., and anteflexion in 37 per cent. of the healthy, while in the ailing the normal position was found in 23 per cent. and anteflexion in 38 per cent. In early pregnancy anteflexion was met with in 80 per cent. of the cases.

The data supplied by Dr. VEDELER are the largest hitherto collected, and they embrace all conditions of adult women. They have a most important bearing upon a question which has for a long time excited the attention of general physicians as well as gynæcologists, and cannot fail of having considerable weight in future discussions of flexions of the uterus and their place in uterine pathology. Besides the magnitude of the figures there are other features appertaining to these data which should be kept in view.

The women examined were not all subject to uterine troubles, but a very large number of virgin and nulliparous subjects examined were in the enjoyment of good health, and made no complaint of symptoms attributable to the pelvic organs. The total number of single and nulliparous women was 1215, and 920 of them had no uterine suffering. This fact gives the work of Dr. VEDELER the highest value; it helps us to discover the most usual position assumed by the uterus in a healthy state of the pelvis, and, together with the other data contained in the paper, it places the subject upon a firm and scientific basis. In about 75 per cent. of healthy women who have not had children, the uterus is in a state of anteversion or anteflexion, while a similar position of the organ is found in 70 per cent. of such women who complain of uterine suffering; and the so-called normal position is found in 8 per cent. only of such women in health, but is found in 13 per cent. when they suffer from uterine disease. Again, the highest proportion of cases of the so-called normal position is found in those who have had children, as well as the lowest proportion of anteflexion. Both conditions are, however, met with almost exactly the same frequency in disease as in health. It is further found in virgins, nulliparæ, and mothers, that although child-bearing has an influence on the position of the uterus, yet the frequency with which any given position of the uterus occurs in health is so nearly the same as the frequency with which it is met with in disease, that it is not possible to charge so-called displacements with being the cause of any symptoms.

Annotations.

"Ne quid nimis."

COLLEGE ELECTIONS.

NEVER before has the prospect of an election at the Royal College of Surgeons awakened so little interest as that which will take place on Thursday, the 6th of next month. The explanation is easy. The three retiring members of the Council are candidates for re-election, and none of the other candidates have claims strong enough to cause a serious diversion. It is highly improbable that either Mr. Marshall, Mr. Baker, or Mr. Power will fail to be returned to the Council. Mr. Marshall has served the College with great fidelity and zeal, and has so far gained the confidence and esteem of his colleagues that he was unanimously elected successor to Sir James Paget as the representative of the Council of the College in the General Medical Council. Mr. Baker has, notwithstanding his residence at Birmingham, been one of the most regular and punctual attendants at the business meetings of the Council. His request for re-election is certain to be favourably entertained by the Fellows. Mr. Power, though a member of the Council of only three years' standing, has given distinct promise of legislative ability. The new candidates are Mr. George Lawson, Mr. John Croft, and Mr. N. C. Macnamara.

SMALL-POX EPIDEMICS.

AT the Statistical Society on Tuesday evening—the last meeting of the session—a paper was read by Dr. Guy, F.R.S., entitled "Two Hundred and Fifty Years of Small-pox in London." Dr. Guy had collected from various sources, fully indicated in the paper, a great amount of numerical information respecting the annual mortality by small-pox in London in each year, with a few unavoidable breaks, from 1629 to 1881. Adopting as his definition of an epidemic of small-pox a mortality by it equal to one-tenth of the whole deaths of the year, he found there were ten such epidemics of small-pox in the seventeenth century, thirty-two in the eighteenth, and none in the nineteenth. "The entire absence of epidemics in the nineteenth century, when 100 deaths per 1000, or 10 per cent., are taken as the mark and measure of an epidemic, is the salient and notable fact which my inquiries up to this point have established." In a subsequent table Dr. Guy shows that the mortality by small-pox exceeded 5 per cent. of the whole deaths in London—twenty-five times in forty-eight years of the seventeenth century, eighty-two times in the eighteenth, and only fourteen times in seventy-two years of the nineteenth. He also shows that the highest proportion of small-pox deaths to 1000 from all causes was 124 in the seventeenth, 184 in the eighteenth, and 98 in the nineteenth century; while the lowest proportion was 2·98 in the seventeenth, 15·32 in the eighteenth, and 0·56 in the nineteenth century. Dr. Guy attributes this comparative exemption and decreased rate of mortality from small-pox chiefly to the beneficial influence of vaccination, without intending to deny that other measures bearing upon general sanitary improvement may have assisted to some extent. But taking the mortality by measles and whooping-cough for the same periods as that by small-pox, he finds that there has been a marked increase in those two diseases in the nineteenth century. Dr. Guy observes—"If then it were to be alleged that the remarkable fall in the maximum mortality from small-pox, and still more remarkable fall in the minimum, are attributable not to vaccination but to miscellaneous sanitary reforms and improvements, we are furnished with a conclusive answer in the figures for measles and whooping-cough. How happened it, it may well be asked, that the same sanitary reforms and

improvements which so greatly lowered the mortality from small-pox, whether we measure it by the maxima or the minima, acted on measles and whooping-cough in the opposite sense, raising in lieu of lowering their respective death-rates?" Referring to the epidemic of 1871, which has been brought forward as a proof of the failure of vaccination as a preventive of small-pox, Dr. Guy remarks—"That atmospheric condition, whatever it may be, to which our epidemics are due, was so favourable to attacks of small-pox that the barrier of vaccination, though effective in ordinary years, proved insufficient in this; the more and the less susceptible were alike seized, and the population swept clear for a time of almost all possible victims. Then vaccination, a protective in ordinary seasons, resumed its sway, and almost brought about the cessation of the small-pox. I can imagine no better explanation than this; but whatever the efficacy of vaccination, certain it is that this nineteenth century in which it has been increasingly at work, and the last forty years, in which it has worked side by side with several sanitary reforms and improvements, have witnessed numerical phenomena which no sanitary reform can explain, and which vaccination alone appears competent to account for." We cannot afford space to follow Dr. Guy through all the details of his very interesting paper, nor of the series of short propositions deduced from the figures with which he concluded it, but must content ourselves with having briefly indicated the preceding prominent points. The paper, like all Dr. Guy's statistical papers, gave evidence of careful research, a thorough knowledge of the legitimate application of figures to the study of questions bearing upon public health, and an honest desire to state fully all the facts which came under his notice, and to draw deductions from them with commendable caution and impartiality. The paper gave rise to an interesting debate in which several distinguished statisticians and members of the profession took part.

FROZEN MEAT.

A LIVELY controversy has been taking place in the columns of the daily press for some time past with regard to the commercial value and future position in the market of the cargoes of frozen meat that we have received, and are still likely to receive, from Australia and America. The question, as usual, has been obscured by exaggerated statements on both sides. Those whose interests will be perhaps injuriously affected by the introduction of a cheap meat supply breaking down the "monopoly" in the meat market, declare the new importation to be no better than offal. Those, on the other hand, who are endeavouring to introduce the new supply laud it as equal, if not superior, to English-fed mutton. The truth lies in the mean. There can be no doubt that much of the frozen meat that has reached this country has become in a sloppy condition by the time it has reached the consumer, and has consequently been of little value. This, doubtless, in some cases has been due to careless storing for the voyage, but generally to improper treatment after its arrival. If the flesh of a recently killed animal be frozen, all chemical changes are arrested so long as the process is continued, but when the temperature is allowed to rise above freezing point the delayed chemical changes take place with great rapidity, especially in the presence of moisture. Now, the arrangements for the sale of a consignment of frozen meat have not had the same care and attention bestowed on them as its preservation and conveyance have received, consequently considerable delay frequently occurs before it finds its way to the market, or from the market to the consumer. If the freezing process is not continued, and if the meat is hung in a damp place, or more especially if brought in contact with salt, it speedily becomes converted into a sodden mass; but if properly treated no fault can be found with it, for the quality is generally excellent, lacking only that perfection of flavour that characterises recently killed English-fed mutton. It is in this respect alone that artificially preserved meat can never compete with that freshly slaughtered. The practical issue of the present discussion will be, we hope, to lead to some improved method of bringing this new and valuable addition to our food supply directly before the consumer, without submitting it to the vagaries of a "ring" of middlemen. If frozen meat is to become popular, it must be sold directly from the freezing-chamber, and the consumer instructed to cook it as soon as possible after receiving it. There ought to be no difficulty in arranging for the construction of freezing-chambers in different parts of the metropolis where a demand for a supply of cheap wholesome meat was likely to exist, and whence it could be sold when required. If the gentlemen interested in this attempt to introduce Australian mutton on a large scale into this country wish to succeed they must give a distinctive character to their undertaking, and see that the venture is brought fairly before the public. Let them be warned by the failure of those who sought to introduce the Cape wines associated with the names of the vintages of Spain and Portugal. The wines of South Africa, in their own character, might have won a reputation, but "Cape sherry" and "Cape port" soon became by-words, and synonymous with the chemical productions of Hamburg and other manufacturers of doctored potato spirit. So, we fear, if this new food-supply is left to the tender mercies of interested middlemen and prejudiced butchers, "Australian" will be the term employed to designate all inferior, and even deleterious, meat that finds its way into the market. One thing is made clear by the controversy: "the trade" does not regard the new commodity with a favourable eye, and evidently does not intend to move out of its old groove to place it on fair terms before the public.

"THE VALUE OF EXERCISE."

WITHOUT obtruding our opinion in a controversy which seems to be going on merrily in the pages of the *Spectator*, we may embrace the opportunity to remark that "the value of exercise" is always dependent on the special needs of the particular organism exercised. The body, as a whole, inclusive of the brain, and, therefore, of what we are wont to call "the mind," is composed of a number of essentially separate, though combined, contributory, and independent, parts or apparatus. Health is the result of the harmonious working together of these systems. Each one for itself obeys the universal law that a living organism feeds as it works; but as all, so to say, dine at the same table, if one is unduly—that is, excessively—exercised, so that it requires a disproportional food, some other parts or part, perhaps the weakest, will be deprived of its natural supply, and suffer in consequence. Speaking generally, it may be said that the food of the entire body is supplied from a central and common source, that each system nourishes itself as its special needs or impulses require, and that its consequent strength or energy is dependent upon and centred in the local apparatus. Thus some individuals are well nourished and energetic as regards their mental system, while they are starved and weakly of body. Others, again, are muscular, but deficient in mind-power. If any one part, of the body as a whole, be overworked or underfed, it is not likely to be beneficial, but the reverse, to overwork some other part. Nothing is gained by exhausting one part of the organism because another is exhausted. Practically "overwork" means work which does not strengthen, but weakens. It may either be excessive in quantity or bad in quality. Whatever the defect may be, it must be remedied locally—that is to

say, as regards the system which is at fault, not by setting some other system in action. In those cases which seem to be benefited by prescribing muscular exercise for mental work and worry entailing sleeplessness, the good gained is not due to the exercise of the muscular system, but to the relief of the brain. Only in so far as increased muscular exercise may quicken the pulse and promote assimilation does the physical exercise of the brain-worker advantage his mental health. It is physiologically impossible to repair the defects of nutrition in one part of the organism by making some other work and feed. There is, however, always behind and underlying these special considerations that all-important one to which we alluded just now; namely, that health consists in the harmonious working together of all the parts or systems of the organism. Therefore to establish a normal state, the wise liver should so order his life and work as to give *every part* of his organism a sufficient incentive to nutrition. This can only be accomplished by ensuring the activity of the body and mind throughout. General exercise must be made up of particular exercises, as general sleep is the sum of particular sleeps.

TISSUE CHANGES IN INFLAMMATION.

IMPORTANT observations have lately been made on the minute changes occurring in the tissue elements of inflamed parts, which throw an unexpected light on the nature of certain components of the connective structures. Hänsel found, in the course of a study of inflammation of the cornea, that the basis substance appears to undergo a transformation into active protoplasm in inflammation of the part, and that the change occurs in a remarkably short time. This has been corroborated by Stricker, who observed the matrix of the cornea to change its structure, even under the eye of the observer, into that of amœboid cells, and these cells again to be transformed back into a matrix resembling that from which they had arisen. These observations demolished the current doctrine that the matrix or basis substance of the cornea is a product of cells, no longer possessing vital properties. The great importance of this discovery has led Spina of Vienna to see whether the same thing is true of other connective tissues. His investigations, lately described to the Austrian Gesellschaft der Aerzte, show that analogous transformations are to be seen in the neuroglia and in the finely granular tissue of the retina. Gerlach demonstrated the reticular structure of the neuroglia of the spinal cord, and since he traced the fibres of the network to the ganglion cells he believed the reticulum to be really nervous in its nature. This opinion has received no support from the investigations of Stricker and his pupils, who maintain that, as commonly taught, the neuroglia is really of the nature of connective tissue. Spina found that if a fragment of brain substance were removed from a healthy living frog or triton, spread out in blood-serum, and examined with a magnifying power of about 2000, the neuroglia appeared as a delicate, fine-meshed network, denser at certain spots, in which round bodies could be seen. In the fibres of the network he was able then to discern distinct morphological changes. A fibre was observed to become swollen or to shrink, or to break up into twigs which coalesced with neighbouring fibres. These changes occurred with as much activity as in living protoplasm. The medullated nerve fibres, which passed through the cortex, presented a marked difference from the fibres of the neuroglia, since they were rigid and unchanging, while the neuroglia network was in constant alternation. This observation affords a fresh reason for believing that the neuroglia is not nervous in nature. Similar changes were found to occur in the finely granular layers of the frog's retina. Osmic acid preparations show that this structure resembles the neuroglia of the brain very closely. When the living retina was watched under the microscope, it was seen that both the finely granular layers behaved in a manner exactly similar to the neuroglia. It was also found that mechanical irritation accelerated the movements of the tissue elements in the case of both the neuroglia and the retina.

DUNDEE ROYAL INFIRMARY.

AT the annual meeting held last week, the report of the directors of the above infirmary showed the number of in-patients for the year to be 1670, a decrease of 7 for the year. There was an increase of fever cases, 80 of these being typhus. On an average, each patient remained under treatment 30·8 days. There was a mortality of 7 per cent., but, excluding those cases which ended fatally in forty-eight hours, the mortality was 5·3 per cent. The district surgeons attended 6352 patients, many of them at their own homes. The financial result for the year is a favourable balance of £402 17*s.* 4*d.* More than ordinary interest attaches to this meeting from the consideration of an excellent report by the directors and Dr. M'Cosh as to the advisability of providing proper accommodation for children either in special wards or in an entirely separate establishment. From the directors' point of view the difficulty was chiefly financial, and they expressed themselves as so far favourable if funds were provided; but they pointed out the large increase of expenditure which would result from the establishment of separate wards, and could not sanction a proposal for an entirely new hospital unless funds not only for building but for endowing the same could be provided. It was shown that at present every seventh patient was a child under the age of twelve years. The directors had invited the opinion of competent medical authorities upon this question of the separate treatment of children, and desired to acknowledge the cordiality with which they had been met. With the exception of Drs. Spence and Balfour, of Edinburgh, there was a concurrence of opinion against independent hospitals for children, but many authorities thought it advisable to provide special wards in general hospitals. Dr. Gairdner, of Glasgow, thought that the effect of children in a general ward was to "beautify and purify the service," yet fully recognised the feeling in favour of separation, which he believed to be very general among parents. Altogether, considerable diversity of opinion among experienced medical men was made manifest, and in the face of this the directors considered it advisable to take no action until after consultation with those who were in favour of separation, and only then on the understanding that some guarantee was given that the extra funds would be provided without detriment to existing institutions. In all this a wise caution has been shown.

DETECTION OF GALL-STONES BY THE HYPODERMIC NEEDLE.

THE *Medical Record* of New York contains an interesting paper by Dr. James Whittaker of Cincinnati, Ohio, on the use of a long hypodermic needle, as a means of determining the presence of gall-stones and their situation. The case was one of occlusion of the gall-duct, in which the diagnosis lay between gall-stones and cancer. He used the needle repeatedly, without any bad effect, and at the depth of "four and three-fourths inches" struck a stone. No inconvenience followed. The exploratory operation was repeated by Dr. Ransohoff more than once. After satisfying himself of the presence of a stone he operated for its removal. The case ended fatally. We await particulars of the operation. Meantime, the point of interest is the "ease, impunity, and almost unconsciousness with which gall-stones may be so diagnosed in this way," or, rather, this is Dr. Whittaker's conclusion.

PRISON MANAGEMENT.

SIR WILLIAM HARCOURT seems completely to misunderstand the nature of the outcry for prison reform. It has not been raised to encourage prisoners to make complaints, but to do away with every possible occasion for grievance, and to submit our prison system to a rigid inquiry, an inquiry that can be alone conducted by scientific men, and not by Commissioners selected solely from laymen. The questions at issue concern the health, mental and bodily, of the prisoners; it is entirely a medical question, and thus can only be dealt with by physicians and physiologists. It is utterly impossible for any body of laymen, however able, to conduct such an inquiry. Having last week indicated some of the points calling for professional investigation, we need not recapitulate them now; but we would repeat that nothing short of a thorough and searching inquiry at the hands of a Commission composed of trained scientific observers will ever effect more than a superficial and transient improvement in our treatment of convict and gaol prisoners. If anything could prove the necessity for the medical element to be represented on the Board of Direction of Convict Prisons in one case and on the Commission of our Local Prisons in the other, it is Sir William Harcourt's absurd proposals which cast an undeserved slur on the prison officials generally, but more especially on the medical officers. We have recently had occasion to speak highly of the medical reports issued by the gentlemen attached to our convict prisons, so full of admirable suggestions and crowded with so much valuable information—material, however, unfortunately wasted, simply because it comes under the cognisance of those who are unable to apprehend the exact bearing of the medical facts. With regard to the surgeons of the local prisons, though the opportunity of speaking their mind to the public through officially published reports is denied them, still there can be no doubt that it is owing to the intelligence, zeal, and self-devotion of the majority that the new Prison Act has been able to be worked at all. Sir William Harcourt's present suggestion is an insult which high-minded and honourable men will find it difficult to bear, and will lead to increased difficulties with regard to the satisfactory working of the prison system. The true policy in the management of our prisons is to attract to them the best men, whether as governors, chaplains, medical officers, warders, &c., men of experience, sound judgment, and of enlightened views. Sir William Harcourt's proposals, however, must tend to deteriorate the quality of men coming forward for such appointments, since none except those to whom such berths are a pecuniary necessity would care to submit to the system of *espionage* now to be instituted. Unsatisfactory as the position of prison medical officers has been, Sir William Harcourt is now about to render it utterly intolerable.

ANTHRAX INOCULATIONS.

THE well-known experimenters of Lyons, Arloing, Cornevin, and Thomas, have communicated to the Académie des Sciences a memoir on the evidence of the persistence of the immunity conferred by the prophylactic inoculation of symptomatic anthrax. In September last thirteen animals were tested, which had been inoculated by intravenous injection in the preceding February. The result proved that the immunity is present after the lapse of eight months. The experiments now recorded demonstrate that it persists at the end of seventeen months. A heifer was inoculated in November, 1880. In April last a cubic centimetre of virulent pulp was injected into the crural muscles, a quantity enough to cause the death of ten similar animals. The heifer was found to be absolutely insusceptible. A guinea-pig inoculated with a small quantity of the same poison was dead in twenty-four hours. Among the animals inoculated at the same time (November, 1880) were five heifers, which had been covered by bulls from sixty to eighty days before the inoculation; they conceived, and their calves were injected with an active virus twelve or sixteen days after their birth. No local action resulted, and the general effect was insignificant. From this it follows that a female of the bovine species, which receives immunity against the bacteria of symptomatic anthrax during the early months of gestation, transmits it to the offspring. Further, two of the heifers inoculated had not been fecundated, but became pregnant, one twenty days, the other three months and a half after the preventive inoculation, by a bull which had also been inoculated at the same date. The two calves resisted subsequent injections, just as did the five already mentioned. The question whether these received their immunity from the father or the mother is still open, but other experiments are in progress to decide the point.

THE DROWNING SEASON—A GOOD EXAMPLE.

DR. BAMPTON of Plymouth has set a good example by taking measures to instruct his fellow-townsmen in the principles of the method to be adopted in the recovery of the apparently drowned. He does not seem, from the report which appears in the local newspapers, to have mentioned that the particular system which he recommends for adoption is that which was introduced into this country some few years ago by Dr. Benjamin Howard, of New York; but the omission is of minor moment except to the inventor. It is of the most urgent importance to the community at large that certain mischievous and erroneous notions which prevail as to the management of cases of apparent drowning should be removed. For example, the neglect to clear the fauces of water is probably one of the commonest causes of death. It is useless applying artificial respiration if the physical result is simply to draw fluid into the larynx and trachea, and rattle it with each successive act of supposed inflation and expulsion. Again, it is more than useless to draw away the blood from the heart by immersing an already fainting organism in a hot bath. The only hope of recovery is from excitation of the heart, yet we strive to draw blood from the heart as a means of relief! There are, doubtless, occasions when that stage of recovery in which a warm bath is likely to be useful may be reached quickly; but as a rule it is not until the heart's action has been fairly well re-established that it is safe to have recourse to this powerful derivative and depressant. Matters of detail such as these may be appropriately discussed in public lectures, and it will do good if the example set by Dr. Bampton at Plymouth can be followed elsewhere.

HYDROPHOBIA AT WOOLWICH.

A CASE of hydrophobia has occurred at Woolwich after an unusually long incubation. The patient was a man who was bitten thirteen months ago at Plumstead. The dog's shoulder had been injured, and, at the request of a lad who had charge of it, the man went to examine it, when the animal bit him on the left wrist. The wound bled a great deal, but was almost immediately cauterised, and soon healed over. A few days afterwards the dog was destroyed, and the circumstance was forgotten, the man remaining in good health until a few days ago. The first symptoms were pain in the stomach, followed by more suggestive symptoms, and inquiries by Dr. Coleman elicited the almost forgotten fact of the bite. According to the newspaper report death occurred very quickly, the pronounced symptoms of hydrophobia only lasting a few hours. It would be interesting to learn the full details of the case, since the mode of onset by pain in the stomach is unusual, and all untypical cases of the disease deserve to be put on record.

FUTILE ATTACKS ON VACCINATION.

THE cause of public vaccination is likely to be only advanced by the reckless and ill-judged allegations against it. Two cases have lately been brought before the public, one before Parliament. In the latter case Mr. P. Taylor asked the Home Secretary if his attention had been drawn to the fact that a baby had died, and that its death had been attributed to "the shock of four insertions of lymph." According to the medical evidence the child might have survived two insertions, "but was unable to withstand the shock caused by four." The jury took a much more cautious view of the matter, and assigned death to "convulsions." Mr. Dodson very properly undertook to investigate the facts more closely. Meantime we suffer from the shock of one of the most inadequate and improbable statements which we remember to have read. Another case at Wolverhampton, at the first blush, has a little more appearance of plausibility, though it crumbles into dust as soon as it is examined. A child, Margaret Price, five months old, lately died with a rash and ulcerations on different parts of the body. When five weeks old it was taken to be vaccinated by Mr. Hayward. He vaccinated it successfully in three places, which healed promptly and properly. Five or six weeks after it began to pine, and thereafter to suffer from the above skin-diseases, and died. The surgeon to whom it was taken, Mr. Freeman, the club attendant of the family, at first referred it to the public vaccinator, "believing it to be suffering from blood-poisoning, the result of vaccination with impure lymph." He adhered to this opinion, and finally expressed it in the certificate of death, which very properly led the registrar to communicate with the coroner. The facts were happily the subject of a full investigation before the coroner. At the adjourned inquest Dr. Ballard attended, and the jury, after a few minutes' consultation, arrived at the verdict that the child "died from natural causes, and not from the effects of vaccination." The child from whom this unfortunate infant was vaccinated was produced, quite healthy. Twelve children vaccinated from it had suffered no bad consequences. Nine of them had been seen—two by Mr. Hayward and seven by Dr. Ballard—all well, with good scars, as the deceased, indeed, had. Then came crushing evidence of hereditary disease in the family of the deceased child. Only two of eight children were living. The first three were born dead. The rest died young. The conclusion of the jury was irresistible. Dr. Ballard might well say the only wonder was that any other view could be taken by a medical man. The issue of the case may serve as a warning to medical men to be a little more chary of assuming that vaccination is to blame for diseases which have only too sufficient an explanation in family histories.

THE MEDICAL DEFENCE ASSOCIATION.

UNDER the presidency of Dr. Richardson the annual meeting of the above Association was held on Wednesday in the rooms of the Medical Society. Dr. Richardson delivered an able address on the fashionable quackeries of the day and other obstacles to the defence of the public against its own ignorance and that of unqualified practitioners. The report read by Mr. George Brown showed that about ten prosecutions had been initiated by the Society, and all of them were successful, a result attributed chiefly to the sagacity of the legal adviser of the Society. Many more prosecutions would have been attempted but for want of funds. A discussion followed the reading of the report, and a general feeling was expressed in favour of assigning the duty of prosecuting under the Medical Acts in future definitely to the Public Prosecutor.

DEGREE OF BACHELOR OF SURGERY AT CAMBRIDGE.

THE regulations for this degree, which has been instituted by the new statutes of the University, have recently received the sanction of the Senate. The candidate will be required to pass all the examinations for the degree of Bachelor of Medicine and to have gone through all the courses of study requisite for the same. In addition, he must have attended two years' surgical practice at a hospital, and have acted as dresser or house-surgeon for six months, and have gone through a course of instruction in practical surgery. He must also undergo an examination, the subjects of which will be—1. Surgical operations and the application of surgical apparatus. 2. The examination of surgical patients. The examination will be partly written, partly oral, and partly practical. It must be remembered that the final examination for the degree of Bachelor of Medicine, which he is required to undergo, includes the Principles of Surgery and Pathology, as well as Medicine, Midwifery, and Medical Jurisprudence. It is obvious therefore that a high standard is intended for the degree; and the degree of Bachelor of Surgery of Cambridge is likely to take no mean place among the surgical qualifications of the country. Knowing how well the examinations are conducted there by eminent men selected from our metropolitan schools to assist the resident staff, we may anticipate that this degree will be aspired to as a valuable professional distinction by the increasing numbers who are resorting to the school of medicine at Cambridge. We are glad that the authorities have not thought it necessary to insist on additional systematic courses of lectures, relying rather on the benefits to be derived from practical instruction in surgery, hospital practice, and dresserships. The institution of this degree will give an impulse to surgical teaching in Cambridge. Already Professor Humphry has announced that he will take "classes for instruction in surgery" during the Long Vacation (July and August); and Mr. Wherry, one of the surgeons to the hospital, has given notice of a "course of instruction in practical surgery."

SCURVY.

DURING the last century scurvy held a prominent position among the pathological questions of the time. Gradually, however, with its disappearance in its characteristic form from among our civil population, and its almost complete extinction in our fleets, it ceased to become a pathological entity, and to be regarded merely as an occasional curiosity. There can be little doubt, however, that the tendency to relegate scurvy to its present insignificant position is as unsound as the undue prominence that was given to the disease by our predecessors, and that the conditions which lead to an outbreak of the disease are thoroughly worth studying with a view to determining the nature of many diseases allied to or are influenced by it. There is increasing evidence to show that though scurvy in its completely developed form rarely occurs at the present time, minor manifestations of the disease are less uncommon than is generally supposed. Surgeon-General Moore has recently read a paper before the Bombay Medical Society, "On some Points connected with Scurvy," in which he points out the frequency with which minor manifestations of the disease occur in some districts of India, especially in Rajpootana and Malwar. He goes so far as to state that the disease may exist without manifest symptoms, that insufficient diet will cause scurvy even if fresh vegetable material forms a part of the diet, though more rapidly if it is withheld. Among the many causes that induce these frequent manifestations of scorbutic conditions, the facts that in Western India

no indigenous antiscorbutic vegetable exists, and that lime-juice speedily deteriorates and loses its antiscorbutic properties owing to the climate, must not be lost sight of. Dr. Eade has reported from time to time similar cases occurring at Norwich, and Dr. Ralfe has stated that he finds mild scorbutic manifestations frequently among his out-patients at the London Hospital. This gentleman has further pointed out the close resemblance that exists between gout and scurvy in its early stages, and has suggested that the primary change in both is due to a chemical alteration in the quality of the blood, in the direction of diminished alkalinity. In gout, as Dr. Garrod has found, the serum reaches the neutral point more nearly than in other diseases. This diminished alkalinity in gout Dr. Ralfe suggests is due to the introduction of acid salts taken in excess with the food and drink, whilst in scurvy it results from the absolute withdrawal of the alkaline salts supplied by fresh fruit and vegetables. Lastly, in the cases of "osteal cachexia" collected by Dr. Gee, and to which reference will be found in THE LANCET of June 3rd, many of the symptoms enumerated give rise to more than a suspicion that a scorbutic element was an underlying factor. The swellings of the bones, without fever or signs of subperiosteal suppuration, are not unlike what is noticed with regard to the nodes caused by subperiosteal hæmorrhages so frequently found post mortem in scurvy. The existence of hæmaturia and a defined swelling in the left leg in one case, and hæmorrhage into the eyelid and gums, together with an ecchymosis over the sternum, in another, are certainly much in favour of the view that scurvy, or at least a scorbutic tendency, was present in these cases. The probability, therefore, of the existence of a scorbutic taint ought not to be ignored when we are called upon to treat vague and indefinite conditions of ill health, apparently arising more from some disorder of nutrition than from any positive visceral or organic disease.

RECOVERY FROM HYDROPHOBIA.

A CASE of recovery from an attack of hydrophobia was related to the Académie de Médecine at the meeting of June 13th by M. G. Denis-Dumont of Caen. The details of this case are given more fully in the letter of our Paris correspondent this week. The patient was a man, thirty-eight years of age, of strong constitution, and previous good health, who was bitten on April 16th on the forearm by a rabid dog, which had bitten the same day a woman and two children. The woman died of hydrophobia on May 20th, and the news of the death profoundly impressed the patient, who became restless, anxious, affected with extraordinary thirst, and complained of sore-throat and of difficulty in swallowing. He refused all drink which was offered to him, manifested a tendency to bite persons and objects around him, and presented convulsive attacks of the character so frequently met with in hydrophobia. He was taken to the hospital on May 23rd, and none of the medical men in attendance had any doubt that he was suffering from hydrophobia. The treatment employed consisted in hypodermic injections of a centigramme of pilocarpine, which caused an abundant diaphoresis and salivation. At the same time a draught was given of two drachms of bromide of potassium, four drachms of chloral hydrate, and an ounce of syrup of codeia (whether at a single dose or in divided doses the report does not state). The symptoms presented a rapid amelioration, and on the 30th of May had entirely ceased. It seems open to question whether or no the case was one of genuine hydrophobia. When the symptoms commence with mental disturbance, distinctly excited by such intense apprehension of the disease as is excited by the news of the death of another person bitten at the same time, the case cannot be regarded as affording conclusive evidence on the therapeutical question. M. Bouley, however, announced his intention of communicating to the Académie at the next meeting another case of hydrophobia in which recovery followed the use of pilocarpine.

EXAMINATIONS IN ELEMENTARY ANATOMY AND PHYSIOLOGY.

THE Council of the Royal College of Surgeons has, through its Secretary, issued to the teachers of anatomy and physiology a circular inviting them to a conference of the College on Monday, the 26th inst., on the subject of these examinations. In case of inability to attend, they are asked to supply answers to the following questions:—"1. What is your opinion on the propriety of holding the proposed examination in elementary anatomy and physiology after the end of the first year of professional study? 2. If it be determined to hold such an examination, what should be its scope in regard both to the subjects involved and the mode of conducting it? 3. At what period after the end of the first year would you propose that the examination should be held? 4. Would you allow any variation as regards time, to meet the cases of exceptional students, at which such examination should be held, or would you fix a certain date after the completion of the first year at which all candidates should pass it? 5. If you would allow a variation, how long would you delay the right on the part of the candidate to pass the examination before presenting himself for the Primary Examination for the membership? 6. And generally will you kindly favour the Committee with any suggestions and observations you may have to make with respect to the examination?"

PROFESSOR NOTHNAGEL.

THE important post of Professor of Clinical Medicine and of Special Medical Pathology and Therapeutics at Vienna, vacant by the death of Duchek, has been conferred on Nothnagel of Jena. No better selection could have been made. The names of few German physicians are more widely known in this country than that of Nothnagel, in consequence especially of his book on the topical diagnosis of brain diseases. His other works, however, have been very numerous, and very valuable. They are chiefly on subjects relating to nervous pathology, but several of the most noteworthy are outside this region. His Handbook of Materia Medica, written in conjunction with Rossbach, is one of the best in any language, and we have recently called attention to the remarkable researches on the symptomatic significance of the fæces and the diagnosis of obscure intestinal affections, researches which are among the most thorough, able, and valuable ever undertaken. The new professor was born in 1841, and is therefore just forty-one years of age.

CAVENDISH COLLEGE, CAMBRIDGE.

BY a grace of the Senate recently passed the students of Cavendish College, Cambridge, have been placed on the same footing as regards the University as those of the other Colleges, and will not, in future, be on the list of non-collegiate students. This College was founded a few years ago to enable students, somewhat younger than ordinary undergraduates, to pass through a university course, and to secure the greatest practical economy in cost as well as time. It has had great success, and several medical students have availed themselves of it. The grace to which we have referred will give them additional advantages. The same advantages will also accrue to Selwyn College, which has been founded with a similar view, more particularly for members of the Church of England, and which will be opened next October.

RED SWEAT.

BABESIU, of Pesth, records some observations on the nature of the red masses sometimes found adhering to the hairs and giving a red colour to the cutaneous excretion. They were made on four patients. Of two sisters, who slept together, the elder one, aged twenty-six, was affected first, and presented pale-red sweat in the right axilla, and occasionally the colour deepened into a blood-red; her sister was afterwards similarly affected. The other patients were a young woman and a young healthy man, who had blood-red sweat occasionally. In all the cases the results of microscopical examination were the same. The axillary hairs were found to be brittle and thin, and surrounded by a thick and rough coating of red matter. This coating was composed of masses of spherical or ovoid bacteria, united by a reddish material, and so arranged as to give a radiating striation to the cross sections of the hairs. The same bacteria were found infiltrating the hairs in places, and also free in the sweat, to which they gave the red colour; they did not penetrate to the roots of the hairs. The bacteria could be cultivated in sterilised solutions, but they multiplied only slowly. Sulphuric acid changed their colour first to violet and then to violet-blue. They stained deeply with hæmatoxylin and aniline. They thus show considerable resemblances to Bacterium prodigiosum, but differ from it markedly in the red colour of the intermediate material of the zooglœa masses. In addition to the colour their presence imparts to the sweat, the only other effect of these bacteria appears to be a certain amount of itching of the part. Their presence accounts satisfactorily for the alleged contagiousness of this affection.

THE LATE SIR JOHN ROSE CORMACK.

AT a meeting of the friends of the late Sir John Rose Cormack, at the house of Dr. Semple, on Monday last, it was decided to organise a committee for the purpose of raising a fund for the benefit of Sir John's family, for notwithstanding the devotion of a long and laborious life to his profession, he has died without leaving any provision for his widow and children. A committee for the same purpose has already been formed in Paris, and subscriptions have been forwarded to that quarter. The London committee consists of Sir J. Risdon Bennett, Dr. Quain, Dr. A. P. Stewart, Dr. B. W. Richardson, Mr. W. H. Michael, Q.C., Dr. Thudichum, Dr. McIntyre, Dr. Semple, and Dr. A. Henry (Secretary). Dr. Semple was appointed Chairman of the Committee, and Dr. B. W. Richardson, Treasurer.

THE REPORT OF THE ROYAL COMMISSION.

IT is to be regretted that premature and fragmentary statements have been made in reference to the Report of the Royal Commission on the Medical Acts. We prefer to wait for the Report in full—a course which is only respectful to the Commission, to Her Majesty, and to the Houses of Parliament. We understand that it would be presented to Parliament only on Thursday evening, and the process of presentation would be hurried so as to allow of the Report (not the evidence, appendices, &c.) being in the hands of the General Medical Council next week.

METROPOLITAN HOSPITAL SUNDAY FUND.

THE total sum received at the Mansion House up to Thursday evening on behalf of this fund amounted to £27,600. There are a considerable number of fresh contributing congregations, whilst many of the old ones have largely increased their contributions. Of the latter, the Church of St. Michael, Chester-square, heads the list, closely followed by Christ Church, Lancaster-gate, and the Church of St. Jude, South Kensington.

"THE MEDICAL DIGEST."

WE have much pleasure in announcing that the second edition of Dr. Neale's excellent work is now ready, and that copies will be sent out to subscribers in the course of a few days. We have been favoured with an early copy, which, as regards elegance and clearness of typography and simplicity of arrangement, equals the first edition issued five years ago under the auspices of the New Sydenham Society. Some idea of the enormous amount of labour which the preparation of the book has thrown upon the author may be gathered from the fact that the work contains nearly 10,000 references, while the book itself has probably over 120,000 distinct entries. The original manuscript contained 1879 pages, each page having, as a rule, six divisions, and in some instances twelve. We sincerely congratulate Dr. Neale on the completion of his task, so faithfully, intelligently, and punctually performed.

EMBALMING.

THE principal Italian embalmers keep their special processes a secret, although the chief steps are well known. The process of embalming is stated to consist of five steps. First, cold water is injected through the whole circulatory system until it issues quite clear; this may take as long as five hours. Alcohol is then injected for the purpose of abstracting all the water from the body; this is followed up by the injection of ether to dissolve out the fatty matter; this injection is carried on for several hours—in thin subjects for two, in very fat ones for even so long as ten hours. After this a strong solution of tannin is slowly injected, and full time is allowed for its soaking into all the tissues; this takes from two to five hours. Lastly, the body is exposed for from two to five hours to a current of warm air, which is previously dried by passing it over heated chloride of calcium. The body can then be preserved for any length of time without undergoing change, and is as hard as stone.

THE INVERNESS POISONING CASE.

WHEN on Good Friday a large number of people were attacked with symptoms of irritant poisoning after eating hot-cross buns at Inverness, it was supposed that arsenic was the cause of the mischief. Since then it has been reported that a local analyst had been successful in finding this poison in buns sent him from the shop from which those suspected were distributed. It would now appear that the analyst employed by the Crown has not detected arsenic or any other metallic poison either in the buns or in the material from which these were prepared. An irritant alkaloid has, however, been found in very recognisable quantity, though its exact nature has not been determined. For this purpose further experiment and observation are required.

TREATMENT OF STRUMOUS GLANDS.

THE treatment of chronic caseating strumous glands has undoubtedly been improved in quite recent times. In the earlier stages the external application of iodoform in the form of its collodion is frequently of marked service, and when suppuration has taken place the thorough local application of powdered iodoform and the enucleation of the glands are of great value in cutting short the affection and producing a quick recovery. In a paper in the *Central. f. Chirurg.*, Dr. von Lesser points out that the disease in the glands often assumes the form of small caseous foci, which may become encapsuled and possibly calcareous, but are more likely to lead to suppuration, during which they are extruded, or to general tubercular infection. In view of these events he has, while the glands are still only indurated, attempted to enucleate these caseating portions of the glands.

His operation is thus performed. Fixing the gland and pushing it forward under the skin with the finger and thumb of the left hand, he makes a small puncture through the skin and into the gland with a narrow knife. Through this wound he passes a small sharp spoon and scrapes the interior of the gland. The soft cheesy portions readily yield and come away, while the more healthy parts of the gland prove more resistant. If several glands lying close together are enlarged, he operates on them all, or on several through one skin wound, the spoon being pushed into one after another. By this means the disease is cut short, ulterior dangers are avoided, and unsightly scars prevented. Lesser recommends that the operation should be done with strict antiseptic precautions, and that care should be taken not to wound any large vessel, nor to leave behind in the wound any of the cheesy débris.

THE CASE OF DR. STORY.

IN another column we print a petition which has been presented to the Home Secretary for mitigation of the sentence recently passed on Dr. Story for arson. Assuming the facts set forth in the petition to be correct, the case is not one for suit, but remonstrance. A gross miscarriage of justice has occurred. A man of weak intellect has been treated as a wilful offender. We offer no opinion on the question of fact, but it will be an offence against public decency if an inquiry is not at once ordered.

WE regret to observe, says the *Port Elizabeth Telegraph* of May 12th, from the reports on Robben Island for 1881, that the spread of leprosy does not appear to have been checked. The number of patients on the island (not a tithe of those who are at large) has gone up from forty-two to fifty, the proportion of Europeans being nearly a third. The chaplain is greatly impressed with the want of means which the island at present affords for the proper housing and care of these patients; and the surgeon-superintendent says that in case of a fire in their quarters (which have a thatched roof), he fears there would be no escape for most of them.

AT a special meeting of the governors of the Chelsea Hospital for Women, held on Monday at the temporary hospital, King's-road, the following gentlemen were elected as additional members of the Medical Staff, in view of the early removal to the new hospital in the Fulham-road, and the consequent necessity for an increased staff:—Physicians: John James, M.B. Lond., F.R.C.S., and Arthur Wellesley Edis, M.D. Lond., F.R.C.P. Assistant-Physicians: Fancourt Barnes, M.D., M. Ch., M.R.C.P., and John Phillips, B.A., M.B. Cantab., M.R.C.S.

AT the meeting of the Metropolitan Board of Works on the 16th inst. the report of the Building Act Committee was presented, and its recommendations with respect to the structural alterations required with the view of averting calamities resulting from fire in theatres were unanimously adopted.

DR. THOMAS ALEXANDER, for some time medical officer at the Great Western Railway Works at New Swindon, has been appointed to fill the post of Medical Officer for the Government Railway Service at the Cape of Good Hope, the particulars of which were advertised in our columns some time since.

IT is stated that nearly 280 candidates have entered their names for the Anatomical and Physiological Examination for the diploma of Membership of the Royal College of Surgeons, a number much in excess of the corresponding period last year.

THE Public Health Committee of the Aberdeen Town Council have agreed to organise a plan by which, when a patient suffering from zymotic disease is removed from a house, the other members of the family would also be taken to hospital. One wing of the Cunningarhill Institution has been appropriated to this purpose.

THE Medical Alliance, we understand, obtained a warrant for the apprehension of Mr. Murdoch's unqualified assistant, for giving the false certificate of death in the case which has justly excited so much notice. The attention of the Medical Council will also be called to this case in all its bearings.

MAJOR-GENERAL SIR EVELYN WOOD, V.C., K.C.B., has been appointed President of a Committee ordered by the Secretary of State for War to investigate charges brought against the Army Hospital Corps in South Africa.

AT the suggestion of Dr. Mackie, surgeon to H.M. Consulate at Alexandria, the Lord Mayor has signified his willingness to open a subscription fund for the relief of the British refugees from Egypt.

THE Boylston Prize Essay given by Harvard University has been obtained by Th. M. Dolan, F.R.C.S. Ed., Halifax, Yorkshire; value of prize 300 dollars (£61 5*s.* 9*d.*), the subject of the essay being "Sewer Gas."

DR. GEORGE ELDER, resident surgeon at the General Hospital, Nottingham, has, we understand, just performed nephrectomy for scrofulous disease.

CHOLERA was very prevalent in Calcutta, according to the papers received by the last mail, but was chiefly confined to the native quarters of the city.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In twenty-eight of the largest English towns, 5764 births and 3079 deaths were registered during the week ending the 17th inst. The annual death-rate in these towns, which in the three preceding weeks had been equal to 21·5, 19·9, and 19·7 per 1000, further declined last week to 19·0, a lower rate than has prevailed in these towns in any previous week of this year. The lowest rates in these towns last week were 11·2 in Norwich, 11·4 in Cardiff, 14·5 in Birkenhead, and 14·7 in Plymouth. The rates in the other towns ranged upwards to 23·3 in Liverpool, 23·5 in Oldham and Blackburn, 24·1 in Sunderland, and 26·2 in Preston. The deaths referred to the principal zymotic diseases in the twenty-eight towns were 465 last week, showing a decline of 62 from those returned in the previous week; 146 resulted from whooping-cough, 84 from measles, 76 from diarrhœa, 72 from scarlet fever, 40 from "fever" (principally enteric), 24 from diphtheria, and 23 from small-pox. The lowest death rates from these zymotic diseases were recorded last week in Norwich, Plymouth, Sheffield, and Newcastle-upon-Tyne; and the highest rates in Portsmouth and Bolton. Whooping-cough showed the largest proportional fatality in Birkenhead, Bristol, and Bolton; measles, in Portsmouth and Bradford; scarlet fever, in Derby and Brighton; and "fever" in Portsmouth and Liverpool. No fewer than 20 of the 24 deaths from diphtheria in the twenty-eight towns last week occurred in London. Small-pox caused 17 more deaths in London and its suburban districts, 3 in Birmingham, 3 in Nottingham and one each in Preston and Bradford. The number of small-pox patients in the metropolitan asylum hospitals, which had declined in the seven preceding weeks from 350 to 257, had further fallen to 251

on Saturday last; 34 new cases of small-pox were admitted to these hospitals during the week, against 43 and 36 in the two previous weeks. The deaths referred to diseases of the respiratory organs in London were 200 last week, and 34 below the corrected average weekly number. The causes of 61, or 2·0 per cent., of the deaths in the twenty-eight towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Norwich, Plymouth, Nottingham, Derby, Birkenhead, Blackburn, and Sheffield, whereas the proportions of uncertified deaths were largest in Oldham, Halifax, Cardiff, and Bradford.

HEALTH OF SCOTCH TOWNS.

The annual death-rate in the eight large Scotch towns, which had slowly but steadily increased in the five preceding weeks from 22·1 to 23·2 per 1000, declined to 20·8 in the week ending the 17th inst.; this rate, however, exceeded by 1·8 the mean rate last week in the twenty-eight large English towns. The deaths referred to the principal zymotic diseases in these Scotch towns were 94 last week, and showed an increase of 13 upon the number returned in the previous week; they included 24 from measles, 20 from whooping-cough, 21 from diarrhœa, 13 from diphtheria, 11 from "fever," 5 from scarlet fever, and not one from small-pox. The 24 fatal cases of measles showed a considerable increase upon recent weekly numbers, and included 7 in Glasgow, 6 in Aberdeen, and 4 both in Edinburgh and Dundee. Of the 20 deaths from whooping-cough 12 occurred in Glasgow and 6 in Edinburgh, differing but slightly from the numbers in the previous week. The 21 deaths attributed to diarrhœa showed a decline of 9 from those in the previous week; no fewer than 15 were recorded in Glasgow. The 13 deaths referred to diphtheria included 6 in Glasgow, 3 in Greenock, and 2 in Edinburgh. The deaths from "fever" showed an increase upon recent weekly numbers, 6 being returned in Glasgow. Two fatal cases of scarlet fever were recorded both in Edinburgh and Paisley. The deaths referred to acute diseases of the lungs in the eight towns, which had been 125 and 107 in the two preceding weeks, further declined to 105 last week, and were 5 below the number attributed to these diseases in the corresponding week of last year.

HEALTH OF DUBLIN.

The rate of mortality in Dublin, which in the two preceding weeks had been equal to 25·5 and 25·0 per 1000, further declined to 19·3 last week. During the first eleven weeks of the current quarter the death-rate in the city averaged, however, 27·7 per 1000, against but 19·7 in London and 20·8 in Edinburgh. The 129 deaths in Dublin last week showed a decline of no less than 38 from the number in the previous week, and were considerably lower than in any preceding week of this year; they included 6 which were referred to "fever," 2 to measles, 2 to diarrhœa, and not one either to small-pox, scarlet fever, diphtheria, or whooping-cough. Thus 10 deaths were referred to the principal zymotic diseases, exceeding by 2 the number in the preceding week; these 10 deaths were equal to an annual rate of but 1·5 per 1000, against 3·2 in London and 3·6 in Edinburgh. The deaths referred to "fever," which had been 3 and 5 in the two previous weeks, further rose to 6 last week. The deaths both of infants under one year of age and of elderly persons showed a marked decline from those returned in recent weeks. The causes of 9 of the 129 deaths last week were "not certified"; this number is exclusive of a considerable proportion of cases in which there was "no medical attendant."

MORTALITY STATISTICS OF NEW YORK.

Recent mortality statistics of New York compare very unfavourably with those of most of the large European cities. According to the official return issued by the Health Department of the City of New York the death-rate in that city during last year was equal to 31·1 per 1000 of its estimated population in the middle of the year. Last year's death-rate did not record 21·2 per 1000 in London, while it was 28·6 in Paris, 27·6 in Berlin, and 29·0 in Vienna. In only two of the more important European capitals did the death-rate last year exceed that which prevailed in New York; in St. Petersburg the rate was equal to 51·4, and in Madrid to 37·4. A large portion of the marked excess in the New York death-rate last year was due to zymotic fatality. The principal disease of the zymotic class caused more than ten thousand deaths in New York, or 27·7 per cent. of the deaths from all causes, equal to a rate of 8·58 per 1000 of the population. In London, on the other hand, the same diseases caused only 17·2 per cent. of the deaths from all causes, and the zymotic death-rate did not exceed 3·64 per 1000. The most fatal zymotic diseases in New York were scarlet fever and diphtheria, which together caused more than four thousand deaths during the year, equal to death-rates of 1·58 and 1·77 per 1000 respectively; while in London the rates from these diseases did not exceed 0·55 and 0·17. The highest recorded death-rate from diphtheria in London was 0·28 per 1000 in 1859 and 1863, which is less than the sixth of the death-rate from this cause in New York last year. Small-pox, measles, and whooping-cough were each less fatal in New York than in London. The death-rate from "fever" (including typhus, enteric, and cerebro-spinal) was, however, equal to 0·86 per 1000 in New York, against but 0·31 in London; this excess was mainly due to the fatality of cerebro-spinal fever, to which but few deaths were referred in London. Diarrhœal diseases were more than four times as fatal in New York as in London, causing a death-rate of 3·43 per 1000 instead of 0·82. Another cause of the high death-rate in New York appears to be the exceeding fatality of phthisis, the reported fatality of which disease was equal to 4·27 per 1000 last year, while in London it did not exceed 2·17. Although zymotic diseases may have been exceptionally fatal in New York last year, the mortality statistics of the city afford unquestionable evidence of a constantly high death-rate, and consequently of a low mean duration of life. Unfortunately, the registration of births in New York is incomplete and untrustworthy, so that it is not possible to apply the test of infant and child mortality to the statistics of that city. The true birth-rate in New York, however, is believed to be far lower than that which prevails in most European capitals, and as 46 per cent. of all the deaths were last year of children under five years of age, against but 41 per cent. in London, it may fairly be presumed that the excess in the death-rate of infants and children in New York is fully as large as the excess in the mortality at all ages.

THE SERVICES.

INDIAN MEDICAL SERVICE. — Her Majesty has approved of the retirement from the service of Deputy Surg.-General William Henry Adley, of the Bengal Army.

Surgeon-General J. E. Clutterbuck has been ordered from India on promotion to Malta, as Principal Medical Officer, vice Surgeon-General W. A. Mackinnon, C.B., transferred to the Medical Branch of the War Office.

Brigade Surgeon Gulland has joined the Western District, on arrival from India, and is posted to the Station Hospital, Devonport.

YEOMANRY CAVALRY.—Surgeon Charles Drage is granted the honorary rank of Surgeon-Major.—Middlesex: Surgeon John Spencer Ferris resigns his commission.

ARTILLERY VOLUNTEERS.—1st Banff: Honorary Assist.-Surgeon James Wilson, from 1st Aberdeenshire Artillery Volunteer Corps, to be Honorary Assistant-Surgeon; Acting Surgeon James Hitchcock, M.B., from 1st Aberdeenshire Artillery Volunteer Corps, to be Acting Surgeon.

RIFLE VOLUNTEERS. — 3rd Renfrewshire: Surg. Andrew Ritchie, M.D., resigns his commission. — 1st Shropshire: William Thursfield, Gent., M.D., to be Acting Surgeon.

ADMIRALTY. — Staff Surgeon Samuel Bamfield has been promoted to the rank of Fleet Surgeon in Her Majesty's Fleet, with seniority of the 12th inst.

The following appointments have been made: — Surgeon John Wilson, M.A., M.D., to the *Hecla*, complement incomplete; Surgeon John Christian, to the *Alexandra*, additional, for disposal; Surgeon Alfred Thomas Corrie, to the *Cambridge*, vice John Price.

ST. JOHN AMBULANCE ASSOCIATION. — At the inauguration of the Wigan centre in connexion with this Association last week, an interesting lecture was given by Mr. R. F. Woodcock, surgeon to the police and volunteer classes, after which the practical working of the system was demonstrated in the presence of the Mayor of the town, who presided, and other influential citizens.

IRISH MEDICAL ASSOCIATION.

THE annual meeting of this Association was held at the Royal College of Surgeons in Ireland on Monday, the 5th inst., the chair being occupied by Dr. Banks, the outgoing President. The report, which was adopted, detailed the proceedings of the Society in the past year, during which thirty-six new members were enrolled. The following resolutions were adopted:—

"That the Union Officers' Superannuation (Ireland) Bill, now before Parliament, when altered in the manner promised by Government, would not afford uniform justice to the claims of medical and other union officers, and would not meet the requirements of the public service; that the Council, therefore, be requested to endeavour to have said Bill so amended that it shall become a thoroughly satisfactory measure."

"That this Association approves of the principles of Mr. Meldon's Bill to provide for the notification of infectious diseases in Ireland, now before Parliament; that the Council be requested to give that measure cordial support, and to endeavour to cause Mr. Gray's Bill on the same subject to be withdrawn."

"That in the opinion of the Irish Medical Association the administration of the law regarding public vaccination in Ireland is unsatisfactory, and that a more vigilant supervision and improved system of inspection are essential for the better protection of the public against small-pox; that it is desirable that a distinct department of the Local Government Board should be created, with power to make and enforce the general observance of such regulations as may, in the public interest, be necessary; and that the English system of inspection of public vaccinations, under which awards are granted for excellence in results, should be extended to Ireland."

"That in the opinion of this Association it is desirable that legislation be sought with a view to enactment of the system to provide for the support of the widows and orphans of Poor-law medical officers, which was submitted by the Council to the last annual general meeting."

In the evening the members and their friends dined together in the Albert Hall of the College, the chair being filled by the new president, Dr. James Moloney.

GLASGOW HOSPITAL FOR SICK CHILDREN.

IT is now well on for twenty years (says the *Glasgow Herald*) since the appalling fact became known that of all the deaths in Glasgow upwards of 50 per cent. were those of children under five years of age. A hospital for the treatment of children's diseases was at that time projected, but the scheme was not then proceeded with. It has been matured and completed now, and Glasgow at last possesses a hospital for sick children which, if not equal in size, will, in the efficiency and completeness of its arrangements, be found equal to any which has preceded it. The new hospital has been erected on Garnethill, a central situation admirably fitted for the purpose. There are three wards affording accommodation for about sixty patients. The hospital will be for the treatment of all diseases of a non-infectious character. The building is externally plain and inexpensive, but no pains or expense has been spared to make the hospital as perfect as possible in all the necessary requirements. Everything as regards drainage, ventilation, heating, the arrangement of the wards, and all other details, is stated to be as perfect as possible. There is ample accommodation for the necessary staff in apartments separated from the wards by a wide corridor, open upwards to the roof, so as to ensure thorough ventilation and proper isolation. It is interesting to mention that the glass of each of the ward windows—nineteen in number—is decorated with pictures for children illustrating popular children's rhymes. All these have been subscribed for by children, who have in this way shown their sympathy. It is proposed that the staircase window should be filled up in a similar way. It is expected that the hospital will be ready to be opened about the beginning of August. A considerable part of the cost hitherto incurred has been provided by donations, but the sum of upwards of £2000 is still required to defray the building and its equipment, and a further amount will be wanted to provide that most necessary adjunct of a child's hospital, a dispensary.

Correspondence.

"Audi alteram partem."

VACCINATION AND SMALL-POX.

To the Editor of THE LANCET.

SIR,—The notes of the following case may perhaps be sufficiently interesting to find a place in your columns.

Mrs. B——, the wife of a billiard-table proprietor, residing in West Brighton, sent for me one morning to see her. When I arrived I found her in bed nursing a baby six months old. She said she felt feverish, so she took to her bed. On examination I found her with a temperature of 101·2°, and with a rosy-coloured rash on the lower extremities and back. The rash certainly looked suspicious of small-pox, though I could not tell just then. I said nothing to the patient of what it might turn out to be, but I instantly took the baby away from her and ordered her other children, of the respective ages of six and three years, out of the room, and, besides prescribing some fever mixture, immediately began to take antiseptic precautions. Next morning I called, and found the rash had extended and become more diffuse. On the third day of my visit she was literally covered with papules from head to foot, there was not a square inch of healthy skin to be seen on any part of her body. I had now made up my mind as to the nature of the disease, and maintained the strictest secrecy, not letting a single person in the house know what it was. These papules went through all the stages of the worst case of variola confluens that I have ever seen, and I am sorry to say I had seen a good many just then. The patient thoroughly recovered, with no other evil consequences than being marked for life. Not one in the house took the contagion (besides her own family there were three other lodgers), nor did a single other case appear in that newly formed and well-peopled district. On examining the children's arms I found three excellent vaccination scars on each arm.

I consider this case very interesting and instructive, inasmuch as it shows—firstly, that efficient vaccination is a very strong safeguard against that deadly virus; secondly, that with the strictest antiseptic precautions from the very commencement of the disease, with complete isolation (if possible), and last not least, with perfect secrecy as to the nature of the disease, the worst case of small-pox can not only be cured, but kept absolutely under control. This last precaution I consider (next to the antiseptic) the most necessary one, for I can trace several cases that were brought on by mental shock; nay, this very case I have quoted could be traced to no other cause than a shock she received, for on entering a shop she says she saw "a woman with her face covered with red blotches." She immediately took fright, and went home in deadly terror with a diseased mind, which I feel certain brought on all her troubles.

I am, Sir, yours obediently,

OWEN SETH, F.F.P.S. Glas., L.S.A.L.

Finsbury-road, West Brighton, June, 1882.

"MEDICAL HOTELS."

To the Editor of THE LANCET.

SIR,—I gather from the expressions in the annotation on the above subject in to-day's LANCET—"the capitalists who have risked £5000 or £6000 in the enterprise," "the investors have got at least 3 per cent. for their money," "large dividends," &c.,—that you do not realise that the object of the Home Hospitals Association for paying patients is not gain, but the relief of the suffering and the advantage of the community. Although the charges are at present so ranged as to include 5 per cent. interest on capital, such interest when earned is not divided amongst the governors and members, but is placed to capital account to provide for the extension of the movement. I may further add that the Association is incorporated as a limited company under the authority vested in the Board of Trade, and article 4 of the memorandum of association forbids the governors or members to

take any profit whatever out of the undertaking. So far from the charges being very high, although Fitzroy House has been constantly filled throughout the year, the fact is that in spite of the greatest economy only £220, or about 3 per cent. on the capital invested, has been earned over and above the working expenses.

As the founder of the Home Hospitals Association, it would ill become me to express any opinion upon the value of the work it has done or is likely to accomplish. I cannot but hope, however, that some of the members of the medical profession who have had patients at Fitzroy House will state their opinions on these two points in your columns, for the guidance of the profession and also of the managers of the Association.

I am, Sir, yours truly,

HENRY C. BURDETT.

Fitzroy House, Fitzroy-square, W., June 17th, 1882.

A CASE OF PUNCTURED FRACTURE OF CRANIUM.

To the Editor of THE LANCET.

SIR,—An account of the following case may not prove uninteresting to the readers of THE LANCET, resembling as it does in some particulars that of Dr. Lownds', recorded in your issue of May 20th. The treatment, however, differed from that adopted by him, and although I now recognise more fully the great value of the antiseptic method than I did at the time when this case occurred, I am still inclined to think that my treatment was the best under the circumstances. On Aug. 12th, 1874, at 2 P.M., I was called to see Mrs. A——, aged thirty-eight, whose husband half an hour before my arrival had thrown a small sharp-pointed poker at her. The missile first struck the side of a doorway, rebounded, and the sharp point entered the poor woman's temple. I found her in a semi-conscious state, breathing slow, pulse feeble, and pupils slightly contracted. There was a wound in the left temple an inch in front of the ear, large enough to admit the point of my little finger, and from which there were oozing blood and brain substance. I cut off her hair and carefully introduced a probe to the depth of two inches, removed some hair from the interior, replaced the fragments of fractured bone as accurately as possible, and, after cleansing the wound and adjusting the integument, applied a simple warm-water dressing. On visiting her at 8 P.M. I found her more conscious. She complained of pain in the head; her face was flushed; pulse more frequent; pupils still slightly contracted. I ordered her hair to be removed and cold to be applied to the head. To have five grains of calomel at once, and an ounce of castor oil in the morning. Diet, tea and milk and small quantities of beef-tea. She slept at intervals during the night.

Aug. 13th, 10 A.M.: Pulse 80; pupils contracted; answers questions rationally; complains of pain in the head; face flushed; very little discharge from wound. To apply same dressing. Bowels had been opened once. Repeat calomel, five grains, immediately. At 3 P.M. she had a severe epileptic convulsion, both sides of the body being equally affected. Five grains of calomel and two minims of croton oil mixed with butter were prescribed. This acted freely on the bowels; she had another convulsion during the night.—14th: Face much flushed; head hot; pulse 94; pupils contracted; the patient is very restless and irritable; there is no discharge from the wound. A linseed poultice to be applied every two hours; apply ice bags to head. To have three grains of calomel every three hours, and an injection of gruel with a drachm of bromide of potassium every three hours. She had several convulsions during the day. 6 P.M.: Pulse 108; pupils with other symptoms the same as in the morning. The same treatment to be continued.—15th: Was very restless and delirious last night; some slight convulsive movements observed. Pulse 102; pupils still contracted. A little discharge of blood and serum has taken place from the wound. To continue poultices and other remedies as before. 6 P.M.: Had another convulsion during the afternoon. Pulse 104; more discharge from the wound; no other change from morning. To continue same treatment.—16th: Had a better night; less delirium; pupils less contracted; face not so much flushed; pulse 94; mercurial fetor of the breath. On examining the wound I found the poultice full of blood and pus mixed with brain substance. From this time my patient began to mend, the discharge continued (becoming more purulent) for more than a week, the wound being completely healed two weeks later, and the woman going about in her usual health, with the exception of being a little more excitable than usual.

I am, Sir, yours truly,

JOHN CRESSWELL, L.R.C.P.E., &c.

Newcastle-on-Tyne, June, 1882.

DEATH DURING CHLOROFORM INHALATION.

To the Editor of THE LANCET.

SIR,—I herewith send you the particulars of the death during the administration of chloroform which occurred at St. Mary Abbott's Infirmary, Kensington, on May 26th.

The patient, J. N——, aged thirty-five, had been operated on here for fistula in ano on April 16th, and had then taken chloroform satisfactorily. On May 26th, I proceeded to administer chloroform a second time, as my colleague wished to complete the first operation and also to remove some external hæmorrhoids which had appeared since last operating. All proceeded satisfactorily until the stage of muscular rigidity, when, as I was feeling her pulse, it suddenly stopped. The administration was at once discontinued and my colleague, Mr. Potter, and myself tried every means we knew of to bring her round: cold affusion, artificial respiration, and the application of the faradaic current; but all was of no avail, and she did not rally.

At the post-mortem we found the heart exceedingly fatty, in the right ventricle there was only about one inch of muscular tissue left; the valves were healthy. I examined the wall of the left ventricle microscopically (freezing a piece of it that afternoon), and found that there was not only fatty infiltration, but also fatty degeneration of the muscle cells, some large oblong cells being seen with fine granular contents, which were evidently degenerated muscular fibre cells.

At the inquest on May 31st, the verdict was brought in of "Death from syncope during the inhalation of chloroform," the coroner remarking "that every precaution had been taken in the case to properly administer the chloroform, and this was one of those unfortunate cases which every now and then do occur during the inhalation of chloroform, in which the heart seems to stop almost immediately without any warning."

The method of administering the anæsthetic was by sprinkling chloroform on a piece of folded lint: the way we always use here. I may say this is the first death that has happened here from chloroform. Last year I gave it in over fifty cases satisfactorily.

I am, Sir, yours truly,

J. M. ATKINSON, M.B. Lond.,
Assist.-Med. Officer.

St. Mary Abbott's Infirmary, Kensington, June 6th, 1882.

ST. JOHN AMBULANCE ASSOCIATION AND THE DOCTORS.

To the Editor of THE LANCET.

SIR,—Permit me through your columns to draw the attention of the Ambulance Branch of the Order of St. John to the want of a more defined system of recording their appreciation of the work done for them by local physicians and surgeons in leading their classes without any *honorarium*. By this sacrifice of time the local medical men save the St. John's Order a considerable sum on each course of lectures, but I fail to find any suitable return made by the Order beyond the rather empty one of making the lecturer an "honorary associate."

I would suggest that whenever such honorary service is given the lecturer should be rewarded in this way: 1st. That he be offered the title of "Surgeon of the Order of St. John," just as parsons are made chaplains of the order. 2nd. That a badge of the Order of special pattern be granted when a second class is taught, and also that a diploma of honour be granted him. 3rd. That there should be some further representation of medical men on the Council of the Order. As the ambulance work depends in a great measure on the sympathy and support of the local physicians, it would be wise of the Order to consider these points.

I am, Sir, yours truly,

N. D. F.

June, 1882.

EDINBURGH.

(From our own Correspondent.)

MORISON LECTURES ON INSANITY.

THE course of Morison Lectures in connexion with the Royal College of Physicians is this year being delivered by Dr. D. J. Hamilton, Professor of Pathology in the University of Aberdeen. The first lecture was delivered to a large audience on June 16th, Dr. Haldane, President of the College, in the chair. The lecture was chiefly occupied with a description of the evolution of the nervous system in man and the lower animals. After some preliminary remarks, the lecturer went on to say there was no doubt that the days of vague speculation were numbered; the psychologist of the future must first become a biologist, and must study the functions of the most complex of all organs from an experimental basis. The first thing to be done in clearing the way to the study of the mind was to become possessed of a correct knowledge of the structure and functions of the organism by which it was evolved; and it was, he submitted, by combining the method of direct experimentation on the lower animals with the bedside study of clinical cases in man that trustworthy results were to be obtained. Proceeding to speak of the evolution of the nervous system, the lecturer said it had now been conclusively proved that the intricate and involved structure of the brain, spinal cord, and nerve ramifications, difficult as it was to realise the fact, had originated from the simplest materials, the complexity and perfect adaptation of these organs to their purpose having been the work of ages. It used to be thought, from the wide discrepancy observed between the nervous system of the invertebrates and the highly complex apparatus of the vertebrates, that there could not be much in common between them. It was now, however, recognised that those systems had arisen from a common stock. The original ancestral type was of the simplest construction, and it was in conformity with the laws of variation and heredity that all progress in development had taken place. Professor Hamilton then proceeded, by the help of diagrams, to give a short description of the nervous apparatus in various forms of invertebrate and vertebrate animals. The second lecture of the series was delivered on June 20th, Dr. Peddie, Vice-president of the College, in the chair. This lecture was chiefly occupied with a description of the arrangements of the convolutions of the brain in the various groups of vertebrate animals. The functions of the different convolutions, as determined by Ferrier in his experiments on monkeys, were then detailed.

GLASGOW.

(From our own Correspondent.)

IN last Saturday's letter I am made to say that the "Greenock" mortality during the first quarter of this year was 34·6. This is a misprint; it was the *Gourock* mortality which reached the figure stated.

Glasgow is at last to have its children's hospital. The opening of this institution is preceded by the usual active canvas for appointment to its visiting and dispensary staff. In connexion with the establishment of this new hospital two thoughts strike me. In the first place it will prove to the Glasgow schools of medicine an aid of which it is impossible to overrate the importance. It is no exaggeration to say that at present most of our students are sent forth as "qualified" to practise, having seen little or nothing of the most common of children's diseases. As a rule, when "capped," not two students out of a dozen can say they have watched and studied a case of scarlet fever, measles, or whooping-cough; most, indeed, have never even seen such cases, except in a chance way in private. And yet it is just such cases which will form the bulk of their practice in after life. The second thought which occurs to me is this: While it is doubtless true that children's diseases are much better treated in special institutions, yet I cannot but bear in mind the fact that for many years the opposite plan has been pursued in our Glasgow infirmaries, a few children being admitted into each adult ward. And this plan has had the very best effects, the children being petted and taken great care of by the older inmates, while the softening effect produced on the latter by the presence of the little children in the ward has been noticed again and again. If the children are kept out of the two older infirmaries, I have no hesitation in saying that this will turn out to be an unmixed calamity for both of them. Further, what will then become of Christmas trees and Christmas parties in the wards of the Royal and Western? And will the sympathetic young ladies continue their visits after the children are gone?

Two children, a boy and a girl, aged three and five respectively, died a few days ago at Newlands, Airdrie, near Glasgow, from eating poisonous herbs. They had been out in the fields with other children, and returned eating some leaves, which they said were "sourocks" (the leaves of Rumex acetosa). As these leaves are very commonly eaten by children without any bad effect, no notice was taken of the matter at the time. Next day, however, the younger child became ill, and died; the other child then fell sick in the same way, and died after about twenty-four hours' illness. No indication as to the nature of the herbs eaten has been obtained.

IRELAND.

(From our own Correspondent.)

MR. E. HALLARAN BENNETT, Professor of Surgery in the University of Dublin, will be a candidate for the Vice-Presidency of the Royal College of Surgeons at the annual election next June.

The Visitors appointed by the General Medical Council having reported in reference to the examinations held at the Royal College of Surgeons, the Council of that body have published some observations which they considered were necessary. The Visitors had recommended in the Clinical Examinations the plan pursued by the English College, which consists in bringing to the College such patients as can be safely removed to hospital to be there submitted to the candidates. The Council cannot, they state, agree to this suggestion. They are of opinion that these examinations should be conducted within the walls of the hospital, as, among other reasons, various important cases of great surgical interest—erysipelas, extravasation of urine, acute orchitis, synovitis, &c.—could not be seen; and further, the plan recommended by the Visitors had already been tried and discontinued in consequence of its inefficiency. In reference to another suggestion that the College should require proofs of "a thorough knowledge of chemistry" in its examinations for Letters Testimonial, the Council dissent from this view, as they consider that such knowledge could not possibly be obtained by the student during the time he can devote to the subject. By the new scheme of education, however, which has now come into force, the subject of chemistry will be examined upon on two separate occasions—viz., at the termination of the first year, and again at the end of the second,—by which means the study of this subject will, the Council think, be sufficiently encouraged, and a competent knowledge of it secured.

Cerebral hæmorrhage has on various occasions been mistaken for drunkenness, and an instance of this occurred at Kingstown last week. A gentleman fell down some steps at the railway-station, and drunkenness being diagnosed by the officials, he was conveyed to the police-station, where he became so ill that he was sent to an adjoining hospital. The resident pupil prescribed for, but did not detain, the patient nor examine his head, not having heard that he received a fall. He was again brought to the police-station, where his condition appeared so serious that he was removed back to the hospital, where on arrival life was found to be extinct. A post-mortem examination showed fracture of the skull and extravasation of blood on the brain.

The National Eye and Ear Infirmary, which has been removed to more convenient premises, contains twenty-four beds for the accommodation of patients, besides a separate ward for the isolation of infectious cases and a private ward for paying patients. Last year 157 cases were admitted to the wards, while 1506 new patients were attended to at the extern department of the hospital. A bazaar held last year realised the handsome sum of £845. The institution is well

worked, and as eye diseases are so prevalent in this country, its services on behalf of the suffering poor are much appreciated.

The Society for Providing Nurses for the Sick Poor of Belfast is one which has been of immense service to the poorer classes of the community in that town. The nurses not only attend the sick poor in their own homes, but they also instruct the relatives how to act in the nurse's absence, showing them, as far as possible, how to help themselves. They attended 701 last year, and with few exceptions all the sick received nourishment, such as milk, meat, eggs, &c. The various articles lent to the sick poor are also a great boon—viz., beds, blankets, easy chairs, water-beds, air-cushions, and bed-rests. The following extract is from the last report:—"During the twelve months just ended we have had the gratification of hearing repeatedly from medical men attending the sick that, humanly speaking, patients owed their lives to the skill and attention of the nurses. Though a nurse is neither a missionary nor an almoner, her feelings of compassion are much on the stretch for the mental and physical sufferings of those she is striving to aid. Her sympathy and patience must be given ungrudgingly. With kind and skilful tact she must cheer on and encourage those about the sufferer who often become disheartened and unkind when the illness is prolonged and the patient, perhaps, is fractious. Though, in many instances, she is repaid for her loving service by a gratitude too deep for words, at other times her duties are performed in the most trying and discouraging circumstances. Having practically experienced the difficulty of finding women in every way capable of and suited to this work, we are deeply anxious that those who have given the best of their days to it should feel they will not be left uncared for in old age; and we observe with much satisfaction among our receipts the sum of £73 6s. 6d. towards a superannuation fund for their benefit."

Dr. G. Dougan, of Portadown, has been appointed Certifying Surgeon of Factories in that district, in the room of the late Dr. McLaughlin.

A special meeting of the Belfast Dispensary Committee was held last Monday to appoint a medical officer to No. 8 District, in the place of the late Dr. Dundee. There being only one candidate, Dr. John Dundee, son of the late medical officer, was unanimously elected to fill the post.

PARIS.

(*From our Paris Correspondent.*)

DR. DENIS-DUMONT, Professor of Clinical Surgery at the Hôtel Dieu at Caen, brought to the notice of the Academy of Medicine, on Tuesday, the 13th inst., the radical cure of a case of hydrophobia by subcutaneous injections of the hydrochlorate of pilocarpine. Such a subject would naturally excite great curiosity, if not great interest, as a remedy for this most fearful of all maladies has yet to be discovered. Dr. Dumont flatters himself he has found it; and so he was allowed to read his report uninterrupted, and in the midst of a dead silence. The case was that of a shepherd, aged thirty-eight, who was, on the 16th of April last, bitten on the left forearm by a dog which was eventually proved to have been mad. The same dog had bitten a woman and a girl on the same day. The shepherd was not much concerned about the bite, and not considering it worth his while to apply to a medical man, cauterised the wound with nitric acid, not with the idea that the dog was mad, but of the possibility of its being so—a practice generally resorted to in such cases, with or without professional advice—and the patient's wound healed kindly. On May 20th—that is, thirty-six days after the bite—the woman above referred to died, with symptoms of hydrophobia, but the girl has had nothing the matter with her. The shepherd, it appears, was deeply affected by the death of the bitten woman, and from the moment he heard of it he got into a state of great excitement, went about wild in the fields, and tried to bite at everything and every person that came in his way. In this state he was taken to the Hôtel Dieu at Caen on May 21st, where the diagnosis was pronounced to be unmistakable, as the patient presented the characteristic symptoms of hydrophobia—suffocating spasm of the throat on attempting to drink, and great dread of fluids. Dr. Dumont seemed to lay great stress on the state of the wound, which reopened, presenting a peculiar livid aspect, and secreting a viscous rusty-coloured fluid. For Dr. Dumont this sign, coupled with the other symptoms, was almost pathognomonic. He immediately injected morphine subcutaneously into the patient's arm, and administered an enema containing six grammes (110·58 grains) of the bromide of potassium, both of which remedies were renewed two or three times in the course of the day without producing any effect in quieting the patient, who was very restless. The next day Dr. Dumont administered three injections subcutaneously of the hydrochlorate of pilocarpine, of one centigramme each, which seemed to have the desired effect, as the patient passed a tolerably quiet night, and he was able to take some soup the next morning, though he still felt some constriction about the throat. In addition to the above the patient had a mixture composed of the bromide of potassium, chloral, and codein. The symptoms gradually subsided, and by the 28th of May—that is, seven days after his admission—the patient was considered cured. Having a presentiment that some doubt would be thrown on the real nature of the case, Dr. Dumont actually went to the trouble of discoursing on the differential diagnosis of delirium tremens, epilepsy, and tetanus, compared with hydrophobia. Even this did not seem to convince the members present, for many showed their scepticism by the significant shrug of the shoulder so peculiar to the French. No discussion followed, as a commission, of which M. Bouley is reporter, has been appointed to investigate the subject. M. Bouley, a distinguished veterinarian and the greatest French authority on rabies, had already been engaged with a report on another supposed case of rabies, said to have been cured by subcutaneous injections of the nitrate of pilocarpine. Both these reports are awaited with some impatience, as it is anticipated that, M. Bouley being so eminently qualified to form an opinion on such a grave matter, they will be intensely interesting.

Owing to the discovery that cantharidism, with its attendant evils, may be produced by the absorption through the skin of particles of the Spanish fly used in blistering plasters, the attention of the profession in France has been drawn to the subject. Commissions from various learned bodies have been held to investigate the matter, with the view of considering whether such a dangerous remedy should not be expunged from the list of therapeutic agents, or whether, on the other hand, on account of the service it has rendered as a counter-irritant or revulsive, the possibility of its producing toxic effects may not be nullified, or, at any rate, reduced to a minimum. The subject was recently brought before the Société de Thérapeutique, and the following were the conclusions arrived at: That the prophylactic effect of the time-honoured use of camphor or alkaline powders in preventing cantharidism is quite problematical, and the Society would recommend the interposition of oiled paper between the blistering plaster and the skin, as a more efficacious remedy. Moreover, they recommend that the plaster should be kept on just till the cuticle begins to be raised, which is known by a slight frizzled appearance, and which in an adult would be effected in six or eight hours. The plaster should then be removed and a poultice applied, which would have the effect of completing the work of the former by raising a blister sufficient for all practical purposes. The plaster should be of small size and well adapted, and care should be taken not to apply it to any abraded surface, or that the cuticle be not broken during the time that the plaster is on, to prevent any risk of absorption. In addition to these precautionary measures, diluents and alkaline drinks may be employed, particularly if the patient manifests any predisposition to affections of the urinary organs.

It cannot be denied that the Municipal Council of Paris have effected great reforms in the internal management of hospitals, though some of them have been rather too radical to be readily accepted. There is one, however, that has been generally welcomed, and that is the placing of the lying-in wards of the general hospitals under the charge of regular accoucheurs, instead of leaving patients at the mercy of ordinary physicians and surgeons, or, in their absence, to internes who may be well up in the science but are quite innocent of the art of obstetrics. The appointments are to be filled up by obstetric physicians and by "concours," and four of the successful candidates have already been nominated. These are Dr. Budin, Dr. Porak, Dr. Pinard and Dr. Ribemont. These gentlemen will be told off to the four principal general hospitals; and another concours will

shortly take place to fill up the appointments in the other hospitals. The out-door midwifery cases of the hospitals will also be under the supervision of the obstetric physicians.

Anyone wishing to gain 20,000 francs (£800) may do so by competing for the Riberi prize for the year 1886, which is offered by the Academy of Medicine of Turin. The subject proposed is, "Recherches embryologiques pour l'avancement de nos connaissances sur l'anatomie, la physiologie, et la pathologie de l'homme."

Paris, June 20th, 1882.

NEW YORK.

(From a Correspondent.)

ON Saturday last the new wing of the German Hospital was opened with the usual formalities. The cost, 68,000 dols., was provided for by the liberality of Mrs. Anna Ottendorfer, the esteemed wife of the proprietor of the *Staats-Zeitung*, a leading German daily newspaper of this city. This addition to the building provides forty-nine beds, two wards containing sixteen each, one ward for children with six beds, and eleven private rooms. I noticed nothing novel in the general arrangements. Money had not been wasted in decorative work, but the wards were light and cheerful, and the sanitary appliances all that could be desired. The medical staff in this hospital are all Germans, and excellent surgical work is accomplished here by Drs. J. Adler, G. Degmer, and A. G. Gerster, the latter especially bearing a high reputation as a skilful and successful surgeon. During the last year the percentage of deaths was 8·75, cured 61·2, improved 29, non-improved 11, cured and improved 80·2. The cost of treatment varies from seven dollars to three dollars per week, including board, medical attendance, and all necessaries; but the German Hospital is practically free for all deserving cases, as out of 1244 patients treated last year 940 received free treatment. During 1881 about 300 patients were treated who were not Germans, almost all nationalities being represented.

In the *Medical Record* of New York for last week (May 27th, 1882) you will find a small paragraph stating that at the last meeting of the Neurological Society a vote of censure was carried reflecting on the recent election of Dr. Edward C. Spitzka as President of that Society. This notice has created much curiosity in medical circles to know what really took place on this occasion. I am indebted to an officer of the Society who was present for the following report of the proceedings written specially for this letter:—"At the April meeting of the New York Neurological Society considerable interest was manifested in the election of officers. As the ballot for the office of president was about to be taken the two candidates who had accepted the nomination at the previous meeting, Drs. L. C. Gray and William J. Morton, withdrew in favour of Dr. E. C. Spitzka, the former gentleman in so doing making some laudatory remarks concerning Dr. Spitzka's services to the Society, and to scientific medicine in general, which were endorsed by the other declining candidate. Dr. E. C. Harwood moved that, inasmuch as the two official candidates had declined in favour of Dr. Spitzka, his nomination be made unanimous, and that the secretary be instructed to cast the vote of the Society in his favour. Dr. Seguin here rose and nominated his assistant, Dr. W. R. Birdsall, against Dr. Spitzka. A ballot was then taken, which failed to result in an election owing to the deposit of blank and scattering votes. A second ballot resulted in Dr. Spitzka obtaining a majority vote, and he was thereupon declared elected. At the May meeting of the Society as the retiring president, Dr. J. A. McBride, was about to deliver his address, Dr. Seguin rose to present a protest against an alleged violation of the by-law, inasmuch as candidates had been voted for and elected who had not been nominated at the previous meeting. Dr. McBride, the President, called Dr. Seguin's attention to the fact that all business of a special or personal character was out of order on the occasion of the annual meeting. Dr. Seguin persisted in holding the floor, and the President called him to order. Dr. Seguin, then appealing from the decision of the chair, was sustained, and read his protest, signed by himself, his brother-in-law, Dr. Amidon, the defeated aspirant to the presidency, Dr. Birdsall, other assistants and pupils of Dr. Seguin's, and various other members of the Society. The document included a protest against the withdrawal of Drs. Gray and Morton in Dr. Spitzka's favour—that is, it referred to the withdrawal without mentioning names, but so pointedly that Dr. Gray rose, and maintained that he was a free agent. Dr. Morton was absent, being engaged in lecturing at the Vermont University at the time. Dr. Harwood asked Dr. Seguin if he would have presented the protest if Dr. Birdsall had been elected, which would have been irregular on technical grounds if Dr. Spitzka's election was irregular. Dr. Seguin made no reply, and Dr. Hammond rose, and stated that the protest was a discreditable document, that those signing it had been guilty of the very act they censured, that not one clause in the by-laws had been violated in Dr. Spitzka's election and nomination, that the protest of Dr. Seguin had merely personal motives, and that he and the independent members of the Society would refuse to vote on the question, as the house was 'packed,' and parliamentary usages had been already violated. A vote was then taken on the question of entering the protest on the minutes, and carried by twenty-one votes in the affirmative and none in the negative. Dr. Spitzka took the chair, delivered the inaugural address, and paid no notice to the protest, as his name and his office were not mentioned therein."

I notice your Paris correspondent's letter on "Hypnotism in Paris," which reminds me of the last attempt to revive an interest in that subject in New York. No practical results were achieved here, and the alienists and others have let the experiments drop. I never had any faith in the professional subjects exhibited by Dr. Beard and his assistant Dr. Carpenter. I believe that where such influences are genuine, it is due to the presence of some form of mental or nervous disease, and Dr. W. A. Hammond concurs in that opinion.

A new medical Society has been organised in New York, called the Practitioner Society, having Dr. William M. Polk as its first President.

New York, June 1st, 1882.

HYPNOTISM IN PARIS.

(From an occasional Correspondent.)

No. II.

IN his graduation thesis, in 1766, at the Faculty of Vienna, which was entitled "Influence of the Planets on the Human Body," Mesmer defined animal magnetism to be a subtle fluid which produced certain phenomena in all animated beings, particularly through the nervous system, and which possessed properties analogous to those of the magnet. Ten years later, notwithstanding the marvellous cures he pretended to have performed with what he believed was a sort of electro-magnetism, he made the startling announcement that animal magnetism was essentially distinct from the magnetic fluid and from electricity. It was a mysterious agent known only by its effects, and which could be communicated at will from one individual to another, who, when once under its influence, became the subject of certain phenomena which are inexplicable by the ordinary means at our disposal, such as by way of physics, chemistry, or physiology. In this assertion we may already perceive the tendency to ascribe the phenomena produced by animal magnetism to some supernatural influence; and Mesmer, taking advantage of the weakness of human nature, and knowing that man is ever ready to adopt anything new or mysterious, particularly when he is assured that it will conduce to his well-being, thrust his memoir on the discovery of magnetism on the public—a work half astronomical and half medical, in which he announced the discovery of a universal panacea which Nature herself offered for the cure of all diseases and the preservation of health. In order, however, to make his discovery acceptable, and to give it a character of importance, he considered it necessary to enshroud it in mysticism, which would be the natural ally of animal magnetism, for both the mystic and the magnetiser profess to have the power of establishing an inter-

communication between the soul of one individual and that of another without the intervention of the body of either. But as it was at the same time necessary to have some palpable medium by which the communication is to be effected, Mesmer invented the famous magnetic tub and the magic harp by which the patients were magnetised. Besides which, fixing his eyes on them, he went through certain manœuvres commonly called "passes." I shall now examine each of these states.

Somnambulism.—This phasis of animal magnetism was accidentally discovered by the Marquis de Puységur, one of Mesmer's disciples, while in the act of mesmerising a peasant, a young man of twenty-three, who after only a few passes fell into a profound sleep, unaccompanied by any of the other phenomena of mesmerism. In this state the man was observed to speak to himself in an audible tone, relating his own affairs as if in conversation with another person. The mesmeriser, it is said, had such influence over him that he made him change his conversation at will, and perform the most extraordinary feats by word of command or by simply touching his body. This occurred in 1784, and the reputation of the Marquis as a magnetiser was established in the province where he was residing, and it soon spread to the other provinces. This transformation of magnetism met with great favour in the country, to which it was confined, as Paris was at the time too much occupied with the eventualities of the approaching revolution. The great Revolution seems to have cast into oblivion animal magnetism and everything else; and it was not till 1813 that we hear anything more about it, when another attempt was made to revive it and to obtain for it the official recognition of the learned bodies, but without success. In 1825 and in 1844 the subject was again brought before both the Academies, but these learned bodies were too jealous of their dignity to allow themselves to be inveigled into lending support to such adventurous and unscientific doctrines. Extraordinary things more or less exaggerated, more or less incredible, and more or less authentic, are said to have been done by subjects under the influence of somnambulism, whether spontaneous or induced. I shall say nothing of the wonderful performances one witnesses at public fairs, as in these places one makes up one's mind to see something prodigiously delusive—not necessarily miraculous or supernatural, but something that cannot be placed in the category of magic and yet would be inexplicable by the light of science. In other words, people go to witness these scenes with a preconceived notion that they are to be deceived, and when they have witnessed them a few times, or even once, their imagination gets so worked up, that what a little while before was to them pure illusion becomes transformed in their minds into stern reality. Then they go on from one illusion to another, and, not content with deceiving themselves, they make the most strenuous efforts to deceive others. Meanwhile charlatans, mountebanks, and other impostors reap good harvests by their craft. But those who labour under such delusions are not always to be found among the most feeble in mind or body, for even men of robust health may be so influenced by the assertions of scientific men that they allow their deluded senses to get the better of their judgment. This was exemplified not long ago in a most remarkable manner in this great city of Paris, which boasts of being in the van of civilisation and learning, under circumstances which would make "benighted Albions" blush. In the month of August, 1880, a young man by the name of Didier, aged twenty-eight, was taken before the police court, accused of having committed certain indecent acts on his own person in a public urinal, which the French criminal code places under the article "outrage public à la pudeur," for which, in the month of October following, he was condemned to imprisonment for three months. But Didier's advocate was not satisfied with what he considered an unjust sentence, and had the matter brought before the Court of Appeal, under the plea that the act with which his client was charged was committed in a state of mental aberration, which in this case presented the form of somnambulism, and for which in consequence he could not be considered morally responsible. (An account of this case was published in THE LANCET on Feb. 5th, 1881, p. 230.) If one may judge by recent proceedings in Paris and elsewhere, there will soon be no more criminals, for almost every person who is sued before the tribunal is considered irresponsible, as he or she is brought under the category of one form or other of the affections of the great centres of the nervous system, such as hysteria and insanity, and if to these be added animal magnetism, somnambulism, and hypnotism, there will be little or no check to crime.

Ecstasy.—This state can also be artificially produced by the ordinary mesmerising processes, and it differs from magnetic or artificial somnambulism in that the ecstatic subject is completely insensible to all external impressions, lies motionless with the eyes immovably fixed as if in contemplation of some imaginary object, voluntary motion is arrested, and even the intellectual faculties and all vital action seem to be suspended.

Catalepsy.—This condition is somewhat analogous to the above, and has in consequence been frequently confounded with it, but the one differs from the other in many essential points. For instance, although as in ecstasy all voluntary motion is completely suspended, the special senses and the intellectual faculties remain unaltered; the subject hears distinctly all that is said around him, feels a pinch or the prick of a pin, but in spite of his will, which remains intact, he is unable to effect the slightest movement, or to reply to questions put to him. If the subject appears insensible to external impressions, it is not that he does not feel or hear, but it arises from his utter inability to express himself or to execute any voluntary movement. What he wants is the power of motility, and, as a necessary consequence, the faculty of expression, and this is why, in the midst of all that is going on around him, he remains perfectly passive. He is nevertheless conscious of his own existence, and of his liberty to move, but he has lost all power to do so. In other words, he has the will but not the power to move or to express himself in any way. In this condition the subject may be placed in any attitude, which he is not able to alter of his own accord, and which he retains until relieved. I am speaking here of induced or artificial catalepsy.

ST. GERVAIS LES BAINS, SAVOY.

(From our Roving Correspondent.)

AT a time when many hard-working Englishmen are beginning to think of the best place for their summer holiday, it may not be amiss to call attention to a health-resort which, though much patronised by French and Italians, is little known amongst us, except to the "Roving Englishman," whose ubiquity is proverbial.

The journey from Paris to Geneva may be made by express train in thirteen hours with very little fatigue, and thence a short six hours by diligence or carriage brings the traveller by way of Bonneville and Sallenches to St. Gervais, a drive of great beauty, affording most part of the way magnificent views of Mont Blanc and its surrounding peaks and glaciers.

St. Gervais les Bains lies close to the main road from Geneva to Chamounix, in a beautiful valley overlooking the river Arve. The establishment is surrounded by pine-trees, and stands in a park of its own, through which runs a rapid stream, the Bonnant. There is a central block of buildings with two lateral wings, each containing five storeys. In the central building are the offices of administration, the library, dining, billiard, drawing-rooms, the office of the medical superintendent, the telegraph bureau, and other apartments. In the basement of the wings are the bath-rooms for men, and on the first floor those for women—in all thirty-two. Behind the central building, in a courtyard, are two drinking-fountains, one the "source du torrent" and the other the "source Gontard," by which the establishment is supplied. In the rear of the establishment is a gorge, down which foams and dashes a magnificent cascade, called the "Falls of the Bonnant." The price of board and lodging is from eleven francs to thirteen francs a day, including wine. The cuisine is excellent. The "source Gontard" is utilised for the baths, and also for internal administration. It springs from a fissure in the granite rock, at the rate of 96 litres per minute, and is of a temperature of 39° Cent. The principal chemical ingredients are sulphate of soda and chloride of sodium. The "source du torrent" is strongly sulphurous, and also contains lithia in appreciable quantity, 23·4 milligrammes per litre. It is only used internally. There is also a ferruginous spring, which is employed as a table beverage. The baths are used at the normal temperature, 38° to 42° Centigrade, at

which the water issues from the rock, and it does not require either cooling or heating. The baths are available for the same class of cases as the waters of Carlsbad, such as skin diseases of an inflammatory character. M. Hardy says they are specially valuable "for invalids of a non-scrofulous type, who are the subjects of eczema; their slightly sulphurous nature, with their laxative and diuretic properties rendering them specially applicable." These waters are suitable for lichen, impetigo, urticaria, and acne, especially in persons of an irritable and nervous temperament. They are greatly recommended for hæmorrhoidal affections, in all cases of abdominal venous congestion, and in uterine catarrh and uterine engorgements when used by the ascending vaginal douche. The thermal treatment is supposed to occupy twenty-one days; but it of course depends on the nature of the case. Numerous charming excursions may be made from St. Gervais, extending from a few hours to several days; for those who are equal to mountain climbing, Mont Blanc and its countless glaciers, passes, and peaks offer the greatest temptation. The complete tour of the monarch of mountains may be made from St. Gervais in three to four days, and on the route the Col de Bonhomen, the Col des Fours, the Col de la Seigne (13,500 ft.) and the Great St. Bernard will be passed, and the picturesque valleys of Chamounix and Aosta will be visited.

MEDICAL NOTES IN PARLIAMENT.

IN the House of Lords on Monday, the Royal Assent was given by commission to the Public Health (Scotland) Act, 1867, Amendment Act.

Petitions.

In the House of Commons, on Thursday, the 15th instant, a petition against the Infectious Diseases Notification Bill was presented from Newcastle-on-Tyne. On Friday petitions were presented for and against the repeal of the compulsory clauses of the Vaccination Acts, the one in favour of retaining those powers being from London, and the one in opposition thereto being from Bedford. A few more petitions against the carriage duty were received. On Monday a memorial came from Bermondsey for an inquiry into the management of the Metropolitan Asylums Board. On Tuesday a petition was presented from the Chancellor, &c., of the University of Oxford against the proposed statute regulating the nomination of University examiners.

Leave of absence for five weeks, on account of ill-health, was granted to Lord John Manners.

Lead-poisoning.

Sir W. Harcourt stated to Mr. Burt that the result of the official inquiry into cases of poisoning at lead works would be presented to Parliament. The inspectors of factories and workshops would be instructed to attend the inquests in such cases.

H.M.S. "Marlborough."

Mr. Campbell Bannerman, in reply to Mr. Gorst, said the Admiralty learned with regret that an engineer student on board H.M.S. *Marlborough* at Portsmouth died, on May 24th, from acute and rapid congestion of the lungs, contracted whilst on duty on board the *Sultan*, on the 22nd. He received every attention from the medical officers of the *Asia* and the Dockyard; and there appeared to be no necessity to appoint a special medical officer to the *Marlborough*, or to make any fresh arrangement for the supervision of the health of the students.

Vaccination.

Dr. Cameron asked the President of the Local Government Board what had been done in fulfilment of his promise to provide a public supply of calf lymph for the vaccination of those who preferred it; if he would state at what date the Government calf lymph establishment was opened; how many points and tubes of preserved lymph had been distributed from it; what arrangements had been made for its distribution to public vaccinators and medical practitioners; what arrangements, if any, had been made for calf-to-arm vaccination at a public station or stations; and how many children had been vaccinated by public vaccinators direct from calf to arm. Mr. Dodson said a station had been established at Lamb's Conduit-street, under the management of Dr. Corbet, which provided regular calf vaccination, and twice a week gave opportunities for vaccination direct from the calf. Calf lymph began to be obtained in July last, and was distributed by the officers of the Board from the temporary offices at Notting-hill. They had great difficulty at first in obtaining suitable premises. Since July last calf lymph to the amount of 2106 points and 78 tubes had been obtained, and had been distributed to the amount of 1672 points and 51 tubes. They had been supplied for public vaccinations to every medical practitioner who applied for it free of charge. Up to March last thirty-seven children had been vaccinated from the calf at Lamb's Conduit-street.

On Wednesday, a petition for exemption from increased carriage duty was presented from Manchester. The motion for the second reading of the Bill for repealing the compulsory clauses of the Vaccination Acts was deferred to August 9th. Mr. Stanhope's Baths and Washhouses Acts Amendment Bill was read a second time.

On Thursday, Mr. Trevelyan stated that he was in communication with the Treasury as to the question of Government provision for the widow of the late governor of Omagh Gaol, who was alleged to have lost his life through the defective sanitary condition of the prison.

Lard Cheese.

Mr. Chamberlain, replying to Mr. Macfarlane, said the Government could take no steps to protect the public from the sale of "cheese composed of skimmed milk and various fats." Nor did he think it was necessary. It was open to any purchaser to proceed against the seller of adulterated articles.—Mr. Macfarlane gave notice that he would take an early opportunity of calling attention to the subject, because he believed the Adulteration Act gave no real protection to poor people.

Obituary.

W. C. ANDERSON, M.R.C.S., J.P., OF YORK.

MR. ANDERSON, whose death occurred suddenly on the 14th inst. from angina pectoris, was born in July, 1807. He studied at University College, London, and obtained his diploma as surgeon, as well as the Apothecaries' licence, in 1831. In the cholera epidemic of 1832 Mr. Anderson greatly distinguished himself by his skilful and unremitting attention to the sufferers from that dreadful visitation in York. In 1854 he was elected sheriff of that city, and in the following year was placed upon the Commission of the Peace. For many years he was surgeon to York Castle, and filled the office of lecturer on Midwifery to the School of Medicine, and that of consulting surgeon to the York Midwifery Institute. Mr. Anderson leaves a widow and two daughters, and also two sons, Dr. Tempest Anderson and Mr. Yarborough Anderson, barrister-at-law, of the Temple, London.

THE CASE OF DR. WM. STORY.

To the Right Honourable Sir William Harcourt, Her Majesty's Secretary of State for Home Affairs.

THE humble petition of the undersigned Harriett Story for a mitigation of the sentence of five years' penal servitude, passed by Mr. Justice Matthew on Dr. William Story, at the Winter Assizes held at Bedford in October, 1881,

Sheweth,—That the above Dr. William Story, who is now upwards of sixty-eight years of age, was a member of the College of Physicians, and a surgeon of many years' practice. That for some time he practised in India and Australia, and during his residence in those countries he had three sunstrokes. That his mind has been on many occasions affected, and he was admitted into Dr. Forbes Winslow's asylum in the month of May, 1873. That on several occasions after his discharge from Dr. Winslow's asylum he has been under the restraint of persons whom Dr. Winslow sent to take care of him by reason of attacks of insanity, associated with epileptic seizures. That it was proved at the trial that Dr. Story had fits of insanity about two or three times a year, and that on these occasions he was not responsible for his actions. That there was only one policy of assurance upon the furniture the doctor was convicted of firing, which was dated 25th January, 1878, and that the fire happened on August 10th, 1881. That it was proved at the trial by the auctioneers who had the selling of the furniture that the property in the house at the time of the fire could not have been replaced for the sum of £500. That the policy of assurance was in the house, and there was no evidence

whatever that a single article of any sort had been removed, and your petitioner believes that at the time of the fire Dr. William Story was not responsible for his actions, who, however, pleaded not guilty, and that the jury with their verdict strongly recommended Dr. Story to mercy. That your petitioner believes at the time of the charge in question Dr. Story had led a blameless life, and your petitioner humbly prays that, considering the circumstances of the case, and that undoubtedly the prisoner's mind was affected at the time, together with the circumstance that the firing of the premises was not an act from which the prisoner would have derived any pecuniary gain, you will mitigate the punishment, and that the friends of the unfortunate man will take care of him in future. And your petitioner will ever pray, &c.,

HARRIETT STORY.

We, the undersigned, beg respectfully to recommend the prayer of the above petition:—

L. F. FORBES WINSLOW, M.B., M.R.C.P., D.C.L.
HENRY F. WINSLOW, M.D., M.R.C.P.
J. LANGDON DOWN, M.D., F.R.C.P.
EDWARD G. GILBERT, M.R.C.S. & L.S.A.
JAMES PALFREY, M.D., M.R.C.P. Lond.
THOMAS JONES SAUNDERS, F.R.C.P., M.R.C.S.E., L.S.A.
J. C. EGAN, M.A., M.D., Vicar of Christ Church, South Hackney.
W. A. PLUNKETT, Solicitor and Member of Common Council, City of London.
W. MARTIN FLEGG, Solicitor, 11, Hills-place, Oxford-street.
A. LEADER, Solicitor, 60, St. Paul's Churchyard.
C. J. RAWLINGS, Solicitor, 59, Bishopsgate Within, E.C.
E. H. MICHELL, 62, Darnley-road, Hackney.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen passed the examination and received the Diploma in Dental Surgery at a meeting of the Board of Examiners on Wednesday last:—

Barnard, Alfred William George, Putney.
Baudry, Alfred Felix, Brussels.
Blackmore, Herbert George, Canonbury.
Curie, Arthur Lister, Hammersmith.
Harrison, Walter, Brighton.
Matthews, Arthur Alexander, Bradford.
Mountford, Arthur Hambledon, Weymouth.
Read, Henry George, Finsbury-square.
Slate, Alfred, M.R.C.S., Ockendon-road.

One candidate was referred.

UNIVERSITY OF CAMBRIDGE.—At a congregation held on the 15th inst. the Degree of M.B. was conferred on the following gentlemen:—

Herbert Knowles Fuller and Jamieson Boyd Hurry, St. John's; Thomas Finch, Gonville and Caius; John Alfred Coutts, Arthur William Taylor, Emmanuel; Arthur Dunville Roe, Joseph Ernest Viney, and Edward Samuel Webber, Downing; Charles Thomas Gordon, Trinity; Francis Edwards, Jesus.

The following have passed the Second Examination for the Degree of M.B.:—

CLASS I.—Habershon, B.A., Trinity; F. M. Haig, B.A., Trinity; G. D. Haviland, B.A., St. John's; Hoffmeister, B.A., Caius; Morrison, Christ's; Reid, non-collegiate.

CLASS II.—Agar, Caius; Bishopp, King's; Browne, Pembroke; Brushfield, Caius; Dixon, non-collegiate; Finch, Pembroke; Fletcher, Caius; Floyer, King's; Jolly, Caius; Jones-Bateman, Caius; Leeming, Christ's; Lilburne, Clare; Lunt, Caius; Lyon, M.A., Emmanuel; Mackenzie, B.A., Emmanuel; Pash, M.A., Pembroke; Robbs, B.A., Caius; P. C. Scott, B.A., St. John's; Shield, Downing; Taylor, B.A., St. Peter's; Walsham, M.A., Caius; Warwick, B.A., non-collegiate; G. F. Welsford, B.A., Caius; Weston, Caius; Wigmore, B.A., Magdalene.

APOTHECARIES' HALL.—The following gentlemen passed the examination in the Science and Practice of Medicine, and received certificates to practise, on June 15th:—

Kealy, John William Gregory, Gosport.
M'Dougall, Herbert Alan Hosier, Winchester.
Papillon, James William, Reading.

The following gentlemen also on the same day passed the Primary Professional Examination:—

Frederick Herbert Lane, University College; Henry Work Dodd and Walter Frederick Mitchell, St. Bartholomew's Hospital.

THE Duke of Albany has consented to open the new Hospital for Stone in Henrietta-street, Covent-garden, on St. Peter's Day, the 29th instant.

ON Monday last the Lady Mayoress opened a bazaar in Camden Town in aid of the funds of the North-West London Hospital.

THE salary of Dr. Hamill, assistant medical officer to the infirmary, St. George's-in-the-East, has been increased from £120 to £150 per annum.

WIRRAL CHILDREN'S HOSPITAL.—The foundation stone of this hospital is to be laid by Lord De Tabley, with full Masonic honours, on the 1st of July.

AMONGST the munificent bequests left by the late Mr. Asa Lees, of Oldham, are £10,000 each to Owens College and to the Oldham Infirmary.

A FRENCH newspaper reports the deaths of a mother and five children from eating poisonous fungi in mistake for mushrooms.

POPLAR HOSPITAL FOR ACCIDENTS.—The twenty-seventh annual festival in aid of the funds of this charity was held at Freemasons' Tavern on Tuesday last. Subscriptions to the amount of £1600 were announced by the secretary.

SEVERAL cases of prosecution for the serious offence of selling diseased meat are reported this week. Some of the delinquents escaped with a fine, but at the Mansion House the magistrate said the practice must be put down, and sentenced the salesman to a month's imprisonment. Bail, however, was accepted.

SOCIETY OF ARTS ALBERT MEDAL.—The Council of the Society of Arts have awarded the Albert Medal of the Society of the present year to Louis Pasteur, Member of the Institute of France, For. Memb. R.S., for "his researches in connexion with fermentation, the preservation of wines, and the propagation of zymotic diseases in silkworms and domestic animals, whereby the arts of wine making, silk production, and agriculture have been greatly benefited."

ROYAL MEDICAL BENEVOLENT COLLEGE.—Mr. J. F. France, who last year purchased a perpetual presentation to the Royal Asylum of St. Anne's Society, in favour of the orphan daughters of medical men who have practised in England and Wales, and vested the nomination in the members of the Council of the Royal Medical Benevolent College, has now purchased a second perpetual presentation on the same conditions. We are informed that the Council will be ready to receive applications in July on behalf of eligible candidates.

THE EAST LONDON HOSPITAL FOR CHILDREN.—On Wednesday evening Dr. Andrew Clark presided at a dinner at Willis's Rooms in support of the above hospital. The hospital originated very humbly in Shadwell about twelve years ago, and since its opening has accommodated about 6000 in-patients. No chairman could have more eloquently stated the claims of a children's hospital than Dr. Clark did in his speech, and he was ably seconded by Cardinal Manning and others. The result was a subscription of over £2000. Dr. Clark vindicated great hospitals on the ground that they are less expensive and more open to public criticism than small ones. He was at once powerful and tender in his appeal for consideration to sick children. The toast of "The Medical Staff" was responded to in an able speech by Dr. Eustace Smith.

THE LEVÉE.—The following members of the medical profession were present at the levée held on behalf of the Queen by the Prince of Wales at St. James's Palace on the 17th inst.:—Dr. J. H. Aveling; Surgeon F. H. M. Burton, M.B., A.M.D.; Surgeon H. J. Barratt, A.M.D.; Surgeon William G. Kynaston Barnes, M.D., R.N.; Surgeon-Major M. Cogan; Surgeon J. J. Falvey, A.M.D.; Surgeon W. A. D. Fasken, M.D., Bengal Army; Surgeon W. E. Griffiths, Bengal Medical Department; Surgeon J. C. Haslett, A.M.D.; Surgeon R. A. K. Holmes, M.D., Bengal Army; Surgeon H. E. R. James, A.M.D.; Surgeon-Major Jeffcoat, A.M.D.; Surgeon-Major Jazdowski; Surgeon W. H. P. Lewis, A.M.D.; Surgeon-Major James Anderson Laing, Madras Medical Department; Surgeon-Major H. W. A. Mackinnon, A.M.D.; Surgeon William Birkmyre Miller, M.A., M.D., C.M., A.M.D.; Surgeon-Major Mookerjee, Madras Medical Department; Surgeon Edmund Distin Maddick, R.N.; Surgeon Robert James M'Cormack, M.D., R.N.; Surgeon F. P. Nichols, A.M.D.; Surgeon T. E. Noding, A.M.D.; Surgeon P. J. Nealon, A.M.D.; Brigade Surgeon E. F. O'Leary, M.D., A.M.D.; Surgeon Andrew Dillon Peyton, R.N.; Deputy Surgeon-General Theobald Ringer, Bengal Army; Surgeon William Gordon Cumming Smith, R.N.; Surgeon-Major William Taylor, M.D., 3rd Battalion the Welsh Regiment; Surgeon G. T. Trewman; Surgeon E. O. Wight, A.M.D.

THE EXMOUTH TRAINING SHIP.—The annual inspection of the Exmouth training ship, at Grays, Essex, under the Metropolitan Asylums Board, was made on the 17th inst. During the year 333 boys had been admitted, four had died, and 328 had been discharged, leaving 563 on board. Of those discharged, 92 joined the mercantile marine, 47 were enrolled in the Army bands, 148 entered the Royal Navy, and the remainder, 41, were returned to their unions or parishes. During 6½ years of the existence of the ship, 1760 lads had been received, of whom 251 entered the Royal Navy and 560 were provided with situations in the mercantile service. Mr. Galsworthy, the chairman of the Board, in his remarks referred to the loss the Board had sustained in the death of his predecessor, Dr. Brewer, and spoke of the low death-rate of the boys on the ship as good evidence of its efficient management.

BOOKS ETC. RECEIVED.

BELL & DALDY, London.

Flax and its Products in Ireland. By Wm. Charley, J.P. pp. 191.

BOGUE, DAVID, London.

The Tissues and their Structure; a Description of the Elementary Tissues of the Human Body. By Alex. S. Kennedy, M.R.C.S. pp. 129, with 8 Plates.

CHURCHILL, J. & A., London.

Sarcoma and Carcinoma, their Pathology, Diagnosis, and Treatment. By H. T. Butlin, F.R.C.S. pp. 202, with 4 Lithographic Plates.

The Student's Guide to Materia Medica and Therapeutics. By J. C. Thorowgood, M.D., F.R.C.P. Second Edition. pp. 344.

Manual of Diseases of the Skin, with an Analysis of 8000 Cases and a Formulary. By L. D. Bulkley, A.M., M.D. pp. 312.

The Change of Life in Health and Disease. By E. J. Tilt, M.D. Fourth Edition. pp. 294.

The Surgery of the Rectum. By Henry Smith, F.R.C.S. Fifth Edition. pp. 185.

On Ovarian and Uterine Tumours, their Diagnosis ann Treatment. By T. Spencer Wells, V.P. R.C.S. Eng. pp. 530.

Clinical Lectures on Diseases of the Urinary Organs. Delivered at University College Hospital by Sir Henry Thompson, F.R.C.S. Eng. Sixth Edition. pp. 174, illustrated.

DEIGHTON, BELL, & CO., Cambridge. BELL & SONS, London.

Spasmodic Asthma: a Thesis for the M.B. Degree of the University of Cambridge. By W. E. Stevenson, M.B., M.R.C.S. Second Edition. pp. 31.

GRIFFIN (CHARLES) & CO., London.

Outlines of the Science and Practice of Medicine. By William Aitken, M.D., F.R.S. Second Edition, pp. 612.

GROSS & DELBRIDGE, Chicago.

An Index of Comparative Therapeutics. By S. O. L. Potter, M.D. Second Edition. pp. 279.

HIRSCHWALD, A., Berlin.

Lehrbuch der Physikalischen Heilmethoden für Aertze und Studirende. Von Dr. M. J. Rossbach. Zweite Hälfte.

JOHNSTON, W. & A. J., Edinburgh.

The Botanical Atlas. By Dr. McAlpine, F.C.S. Part 2. With 4 coloured Plates.

LIVINGSTONE, E. & S., Edinburgh.

Hospitals, their History, Construction, and Hygiene. By J. F. Sutherland, M.D.Ed. pp. 151, with Illustrations.

LONGMANS, GREEN, & Co., London.

Medical and Surgical Aspects of Genu Valgum. By W. J. Little, M.D., F.R.C.P.; assisted by E. Muirhead Little, M.R.C.S. pp. 161, with numerous Illustrations.

A Handbook on Diseases of the Skin. By Robert Liveing, A.M., M.D. Cantab., F.R.C.P.L. Third Edition, revised. pp. 349.

On Failure of Brain-power. By Julius Althaus, M.D. Second Edition. pp. 53, with Engravings.

MURRAY, J., London.

The Funeral Tent of an Egyptian Queen. Printed in Colours, in Facsimile, from the Author's Drawings taken at Boulak. By Villiers Stuart, of Dromana, M.P. pp. 163, with numerous Illustrations.

PUTNAM'S SONS, New York.

Papers and Proceedings of the National Association for the Protection of the Insane. pp. 55.

SMITH, ELDER, & Co., London.

The Physiology and Pathology of the Blood. By Richard Norris, M.D., F.R.S.E. pp. 274, with Micro-photographic Illustrations.

STANFORD, EDWARD, London.

Madeira, its Scenery and how to see it. With Letters of a Year's Residence, and Lists of the Trees, Flowers, &c. By Ellen M. Taylor. pp. 261, with Frontispiece, Map of the Island, and Plan of Funchal.

Holidays in Spain. By F. R. McClintock. pp. 204.

TREAT, R. B., New York. CHURCHILL, J. & A., London.

The Illustrated Quarterly Medicine and Surgery. Edited by G. H. Fox and F. R. Sturges, with the co-operation of other Professors. Vol. I., Nos. 1 & 2. With coloured Plates and Woodcuts.

Index Medicus, Vol. IV., No. 4. (Leypoldt, New York.)—Treatment of Cancer; by John Clay.—Effect of Genital Irritation in the Production of Nervous Diseases; by L. C. Gray, M.D.—The Opium Habit; by E. H. Sell, M.D.—Summer Tours in Scotland: Glasgow to the Highlands.—Scheme for Amending the Drainage of Portsmouth on the "Shone Pneumatic Sewerage System"; by Isaac Shone, C.E. & M.E., and G. A. Wallis, C.E.—Treatment of Cancer of the Uterus; by Dr. W. H. Baker.—Good Words, Sunday Magazine, for June. (Isbister.)—Leisure Hour, Girl's Own Paper, Boy's Own Paper, Sunday at Home, for June. (Religious Tract Society.)—A Trip to the Ardennes.—Hot-water Heating; by F. A. Fawkes, F.R.H.S.—The Battle of Boulogne.—Fraser's Magazine, June.—Contemporary Review, June.—Medical and Surgical Reports of the Boston City Hospital; third series.—Great Northern Railway Panoramic Guide. (Bemrose.)—Germ Theory of Disease; by Wm. Thomson, F.R.C.S., Melbourne.—Carotid Compression and Brain Rest; by J. L. Corning, M.D. New York.—Notes on Physiological Optics; by W. Le Conte Stevens.—Archivio Medico Italiano.—Sanitary Houses, and how to Select one; by F. A. Bond, M.B.Ed. (Kegan Paul.)—Field Naturalist, June.—On Dermoid Cysts, especially those of the Ovary; by F. W. Ellsner, L.M.K.Q.C.P.I.—Études sur la Lithotritie à Séances prolongées; par le Dr. E. Desnos.—Proceedings of the National Association for the Protection of the Insane and the Prevention of Insanity, held at New York, January, 1882. (Putnam's Sons.)—Uebertragungsversuche von Lepra auf Thiere; von Prof. H. Kobner en Berlin.—The Life of Charles Darwin, with British Opinion on Evolution; compiled by G. W. Bacon, F.R.G.S.—Colour-names, Colour-blindness, and the Education of the Colour Sense, in our Schools; by B. Joy Jeffries, M.D.—Realities of Irish Life; by W. Stewart Trench. (Sunbeam Series, Longmans.)—The Opium Shops of Bombay; by Deputy Surgeon-General Moore.—Dickens's Continental A B C Railway Guide; published monthly, 1s. (Macmillan.)—China Imperial Maritime Customs: Medical Reports.—Parecer da Commissão encarregada pelo Conselho da Escola Medico-Cirurgica de Lisboa.—Membranous Dysmenorrhœa; by Dr. O. Stroinski.—Remarks on certain Medical Principles and Publications; by Dr. Jos. Hamerink, of Prague. (Allen & Co.)—Gastein, its Springs and Climate; by Dr. G. Procll.—Die Topographische Percussion im Kindesalter; von Dr. H. Sahli.—Elephantiasis Arabum; by Dr. G. A. Turner.—Le Sabbat des Sorciers; par MM. Bourneville et E. Teinturier.—An Enquiry into the Prevalence of Small-pox in Kilmarnock in the last Century; by Dr. J. C. McVail.—Annual Report of the North London Hospital.—Uselessness of Vivisection upon Animals as a Method of Scientific Research; by Lawson Tait, F.R.C.S.—Transfusion Directe du Sang Vivans; par Roussel de Genève.

Medical Appointments.

Intimations for this column must be sent DIRECT *to the Office of* THE LANCET *before 9 o'clock on Thursday Morning, at the latest.*

AINSLEY, THOS. GEO., M.B. Durh., M.R.C.S., has been appointed Honorary Physician to the Hartlepools Hospital, vice J. W. Crowe, L.K.Q.C.P.I., resigned.

COMBER, JAMES HENRY, M.R.C.S., has been appointed Medical Officer to the South Wimbledon District of the Kingston Union.

EDWARDS, A. R., M.R.C.S., has been appointed Assistant House-Surgeon to King's College Hospital.

EVANS, FRED. WM., M.D., C.M. Aber., has been appointed Medical Officer for Out-patients, Glamorganshire and Monmouthshire Infirmary and Dispensary, vice Vachell.

EXHAM, ARTHUR R. F., M.B., B.Ch. Dub., L.M.K.Q.C.P.I., has been appointed Medical Officer to the Workhouse of the Drayton Union.

GROGONO, WALTER ATKINS, L.R.C.P.Ed., M.R.C.S., &c., has been appointed Public Vaccinator to the Church-street Ward of the West Ham Union, vice Levick, deceased.

HOSEGOOD, SAMUEL, M.R.C.S., L.S.A.Lond., has been reappointed Medical Officer of Health to the Swinton and Pendlebury Urban Sanitary District.

JONES, H. MACNAUGHTON, M.D.Q.U.I., F.R.C.S.I., has been appointed Senior Physician to the Cork Fever Hospital, vice Beamish, resigned.

LAWRENCE, G. EDGAR, L.R.C.P.Lond., M.R.C.S., has been appointed Medical Officer to the Workhouse of the Bath Union.

LEE, HERBERT GROVE, M.D. St. And., M.R.C.S., L.S.A.Lond., has been appointed Medical Officer to the Ninth District of the Wycombe Union.

MCGEAGH, JAS. P., M.D., M.Ch., has been appointed Resident Medical Officer to the Walton Workhouse, West Derby Union, Liverpool.

MCLEAN, ALLAN, L.R.C.S.Ed., L.S.A.Lond., has been appointed Medical Officer to the Leatherhead and Fetcham District of the Epsom Union.

MORIARTY, T. BARRY, M.D., L.R.C.S.Ed., has been appointed Physician to the Cork Fever Hospital, vice Jones.

ODLING, ALFRED E., M.R.C.S., L.S.A.Lond., has been elected House-Surgeon to the Croydon General Hospital, vice Walter Cooper, resigned.

PAINE, HENRY JAS., M.D. St. And., M.R.C.S., L.S.A.Lond., has been appointed Consulting Physician to the Glamorganshire and Monmouthshire Infirmary and Dispensary.

PROUDFOOT, THOMAS, M.B., C.M.Ed., has been appointed Medical Officer to the Sixth District of the Morpeth Union.

ROBERTS, T. A., M.R.C.S., L.S.A.Lond., has been appointed Medical Officer to the Chapel-hill District of the Boston Union, vice Charles Blades, M.R.C.S., L.S.A.Lond., deceased.

ROBERTSON, E. WAGSTAFF, M.B., C.M.Aber., has been appointed Resident Medical Superintendent to the Aberdeen Royal Infirmary and Lunatic Asylum, vice Rattray, resigned.

TAYLOR, WILLIAM, M.D., L.R.C.P.Ed., M.R.C.S., L.S.A.Lond., has been appointed Physician to the Glamorganshire and Monmouthshire Infirmary and Dispensary, vice Paine.

THORP, SIDNEY, M.R.C.S., L.S.A.Lond., has been reappointed Medical Officer to the Second District of the Halsted Union.

VACHELL, CHARLES TANFIELD, M.D., L.R.C.P.Lond., M.R.C.S., L.S.A.Lond., has been appointed Senior Surgeon to the Glamorganshire and Monmouthshire Infirmary and Dispensary, vice Taylor.

WEATHERLY, Dr. LIONEL A., has been appointed Deputy Coroner for the North-Eastern Division of Somerset, vice Mr. Robert Biggs, of East Bath, deceased.

WILLIAMS, WILLIAM HENRY, M.R.C.S., L.R.C.P.Lond., Honorary Assistant Medical Officer, has been appointed Honorary Medical Officer to the Yeatman Hospital, Sherborne, Dorset, vice N. E. Davis, resigned.

Births, Marriages, and Deaths.

BIRTHS.

ALLEN.—On the 13th inst., at Greasley House, Belper, the wife of Richard G. Allen, M.R.C.S., L.R.C.P.Ed., of a son.

BENHAM.—On the 13th inst., at Museum-street, Ipswich, the wife of Henry James Benham, M.D.Lond., of a daughter.

BRITTAN.—On the 2nd inst., at Gwynfryn, North Wales, the wife of F. Brittan, M.D., late of Clifton, Bristol, of a daughter.

CLARKE.—On the 25th ult., at Somerset East, South Africa, the wife of Thomas Furze Clarke, M.R.C.S. &c., of a daughter (Sylvia).

COOKE.—On the 18th inst., at Higham House, Well-street, S. Hackney, the wife of J. Benson Cooke, Surgeon, of a son.

PARROTT.—On the 13th inst., at The Thorn, Hayes, Middlesex, the wife of Edw. J. Parrott, L.R.C.P.Lond., of a son.

ROUTH.—On the 18th inst., at 33, Marina, St. Leonards-on-Sea, the wife of A. Curtis Routh, Esq., M.R.C.S., of a son.

SYKES.—On the 17th inst., at 7, Thayer-street, Manchester-square, W., the wife of John F. J. Sykes, M.B., B.Sc., of a son.

WHITMORE.—On the 19th inst., at 24, Ovington-gardens, the wife of William Beach Whitmore, M.B., of a son.

MARRIAGES.

CHITTY—DUNNETT.—On the 14th inst., at the Parish Church, Dedham, Essex, Alfred Goldney Chitty, M.R.C.S., L.R.C.P., L.M., Ed., of Huddersfield, son of Aynott Chitty, Esq., Surgeon, Dedham, to Ellen Amanda, eldest daughter of W. H. Dunnett, Esq., of Stour House, Dedham.

HALLWRIGHT—WYBROW.—On the 15th inst., at St. Peter's Church, Bournemouth, Matthew Hallwright, M.R.C.S., of Stirling House, Hagley-road, Edgbaston, and Summer-hill, Birmingham, to Emma Janet, daughter of William Wybrow, Esq., of Ravensbourne Lodge, Bromley-common, Kent.

MARTIN—WHITE.—On the 8th inst., at Limerick, John Wise Martin, M.D., of Brunswick-street, Sheffield, third son of James Martin, F.R.C.S.I., of Portlaw, County Waterford, to Louise Helen, youngest daughter of William H. White, of Richmond, Limerick.

RISDON—DUNNING.—On the 15th inst., at Winkleigh, George Owen Risdon, L.R.C.P.L., M.R.C.S., of Wells, third son of the late W. Risdon, Esq., of Dolton, to Annie Louisa, youngest daughter of the late R. Dunning, Esq., of Townsend, Winkleigh.

DEATHS.

DOUBLEDAY.—On the 18th inst., at Long Clawson, Leicester, shire, Edward Doubleday, L.R.C.P., F.R.C.S., L.S.A. Lond. aged 83.

HEALE.—On the 15th inst., at Warwick, Alfred Heale, M.R.C.S., late of Luton, Beds, in his 70th year.

MCKAY.—On the 15th ult., at his residence, Beaverton, Alex. McKay, M.D., eldest son of the late James McKay, of the Township of Finch, County of Stormont, aged 55.

PATTISSON.—On the 18th inst., at Poplar, of phthisis, Joseph Tarn Pattisson, L.R.C.P., M.R.C.S., late Surgeon-Superintendent, Government Emigration Service, aged 46.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 5.30 a.m. by Steward's Instruments.)

THE LANCET OFFICE, June 22nd, 1882.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radia in Vacuo.	Max. Temp. Shade.	Min. Temp	Rain fall.	Remarks at 8.30 A.M.
June 16	30·18	N.E.	54	49	107	66	42	..	Hazy
,, 17	30·14	S.W.	60	53	110	68	46	..	Bright
,, 18	29·81	S.W.	59	58	98	64	49	·09	Raining
,, 19	29·68	N.W.	58	53	112	68	47	·10	Cloudy
,, 20	29·87	W.	61	54	112	71	49	..	Bright
,, 21	29·89	S.W.	59	57	89	66	51	..	Overcast
,, 22	29·79	S.W.	58	56	..	62	54	·02	Raining

Notes, Short Comments, and Answers to Correspondents.

THE MASSACHUSETTS EYE AND EAR INFIRMARY.

IN a paragraph inserted in our number for Jan. 28th, announcing the death of Dr. Edward Reynolds, the oldest physician of Boston, U.S.A., we spoke of him as *the* founder of the Massachusetts Eye and Ear Infirmary. By a memoir of Dr. John Jeffries, published in the *Boston Medical and Surgical Journal* for August 10th, 1876, we find, however, that the latter physician was associated with his friend Dr. Reynolds in the founding of that institution.

LIFE ASSURANCE OFFICES AND MEDICAL FEES.

To the Editor of THE LANCET.

SIR,—I forward the enclosed correspondence, as I consider it a duty medical men owe to their profession to expose the paltry excuses by which some insurance offices seek to deprive medical men of their just rights.—I am, Sir, your obedient servant,

Brentwood, June 8th, 1882. BENJAMIN BAKER, M.R.C.S.

[COPY.]

"——— Life Assurance Company, May 30th, 1882.

"Sir,—Referring to yours of the 29th inst., I beg to say that the attestation form sent you respecting Mrs. K—— (deceased), is one of the official documents which are to be furnished by the claimants at *their own expense*. In all cases where *the company* seeks the services of a medical practitioner *direct*, the usual fee is invariably remitted. Perhaps under the circumstances you might feel disposed to modify your charge for the benefit of the claimants.—I am, Sir, yours truly,

"B. Baker, Esq., Brentwood." "———, Sec.

[COPY.]

"Brentwood, June 3rd, 1882.

"Sir,—Referring to your letter of the 30th ult., I beg to say that as the information required is for the *sole* benefit and protection of your office, that *the office*, and *not* the 'claimants,' are the proper parties to pay for it. Such a policy of yours may save an occasional fee, as many medical men, like myself, would submit to loss rather than have their patients harassed about such matters; but in the long run such a system defeats itself, as no practitioner having been so treated would recommend an office acting upon their principles.

"I am, Sir, your obedient servant,

"The Secretary." "BENJAMIN BAKER, M.R.C.S.

"*" The question raised by our correspondent is one which very seriously affects the relationship between insurance boards and the members of the medical profession. We know that some boards which desire to be most liberal feel a difficulty in paying the fee for "attestation." In our opinion it would be the fairest arrangement for the companies to be satisfied with the ordinary medical certificate in all cases where there was no exceptional objection to its acceptance, and for them to pay the medical attendant a fee in the usual way if they wish to have from him a special attestation.—ED. L.

Mr. Ramsay, Mr. P. H. Bryce, Mr. F. J. Allan.—We must decline. It is not our rule.

Mr. D. A. W. King.—Publishing the circular would be giving the advertiser additional notoriety, which is what he desires.

"NIGHTMARE PRODUCED BY THE INTERNAL USE OF TAR."

To the Editor of THE LANCET.

SIR,—I beg to answer Dr. Lewis's query in your issue of the 17th inst. about nightmare following the internal use of tar. For the last three years I have been using a cough mixture which, among other ingredients, contains three drachms of tar to the pint. Of this I put three to four drachms to a six-ounce bottle of water, a tablespoonful being a dose. During its use I never have heard any complaint of its causing dreams, nightmare, or restlessness at night; in fact, the old people with chronic coughs put great trust in "that tarry trade," as they call it, and I must say it does seem to work wonders.

I am, Sir, your obedient servant,

Devon, June 19th, 1882. WILLIAM FRASER, M.B.

"THE STARVATION OF OUR HOSPITALS."

To the Editor of THE LANCET.

SIR,—In the article on the above subject in your last number, you mention St. Mary's Hospital as one of those of which the expenditure has not exceeded the income. I regret that such is not the case; and last year, owing to the increased number of occupied beds, the expenditure did exceed the income, and at the present time the number of occupied beds frequently exceeds 200 (although the hospital is only supposed to contain 190 beds). We shall require every assistance the Hospital Sunday Fund can afford to St. Mary's, as well as increased subscriptions, to meet the cost of the immense amount of good the charity is doing to the sick poor.

You also state that the cost per bed per annum in most of the London hospitals is between £80 and £95. I am aware that in some it does exceed £80, but St. Mary's, owing to the careful management of the Board, has supported its beds as follows:—1879, £68 12*s.* 9*d.*; 1880, £67 16*s.* 8*d.*; and 1881, £68 16*s.* 1½*d.* I believe, but the report is not yet published. This economical management ought to be a strong recommendation to the public in general and to the administrators of the Hospital Sunday Fund for increased support, and I shall feel obliged if you will give this letter publicity in the next number of your valuable journal.—I am, Sir, your obedient servant,

THOS. F. CHAPPÉ,
One of the House and Finance Committee of
June 15th, 1882. St. Mary's Hospital.

Clericus.—The statement of our correspondent is too meagre to form the ground of a definite opinion. The whole of the circumstances should be explained to the medical attendant, and the onus thrown upon him of establishing his claim upon a commercial basis.

An Irishman.—We know of no data that give support to the statement.

Mr. Longster.—The opinions of observers are conflicting on the point.

RUPTURE OF THE BLADDER.

To the Editor of THE LANCET.

SIR,—The paper of Mr. Rivington in your pages reminds me of the following incident, which occurred in my practice some months since. A gentleman of about eighty years of age suffered for about two years from malignant disease of the prostate, which had extended into the floor of the pelvis, occasioning at times acute pain of a lancinating character, with total inability of voiding urine, whereby a gum-elastic catheter, without a stilet, was required to be introduced four or five times during the twenty-four hours, which he was in the habit of doing himself. One morning he mounted a stool in order to wind up the clock, which was fixed above the mantelpiece. Suddenly he experienced pain of a rending character about the anal region. Thinking his bowels were about to act, he was placed upon the commode, when it was discovered that urine of an offensive odour was passed. In fact, a rupture had occurred about the trigone. He lingered for about six weeks, and during this period did not have recourse to the catheter. Sometimes the urine was not evacuated for two or three hours, and then would pass with a rush, particularly upon the bowels acting.

I am, Sir, yours, &c.,
Forest-hill, S.E., June, 1882. SPENCER T. SMYTH, M.D.

Mr. Vincent Jackson.—A post-mortem examination would, we agree have made the evidence more complete, but the absence of it does not alter our views as expressed elsewhere. Our correspondent is right in thinking that an inquest should imply "a complete and thorough inquiry into the cause of death."

Dr. J. A. Campbell.—If possible, next week.

M. A. B. might apply to Moore and Co., St. Mary-axe.

Dundela.—71, Brook-street, Grosvenor-square, W.

RAMSGATE DEATH-RATE.

To the Editor of THE LANCET.

SIR,—In my returns to the sanitary authority of this place, I reported a death-rate of 5·5 per 1000 for the fortnight ending June 3rd, and a total absence of zymotic diseases. This I believe to be the lowest death-rate in any town in the kingdom for that period, and perhaps therefore you would oblige by inserting the fact in your valuable journal.

I am, Sir, yours truly,
EDWARD WALFORD,
June 13th, 1882. Medical Officer of Health for Ramsgate.

*** It must at all times be satisfactory to an urban sanitary authority to receive such a report as that referred to by our correspondent, but it would be unwise to attach too much importance to an exceptionally low annual rate, or to immunity from fatal zymotic disease, during so short a period as a fortnight, in a sanitary district having a population not larger than that of Ramsgate.—ED. L.

A QUERY.

To the Editor of THE LANCET.

SIR,—A middle-aged medical man, threatened with paraplegia, is desirous to know if there is any institution into which he could be received by making a moderately small payment if he becomes incapacitated. Perhaps some of your readers could answer the question.

I am, Sir, yours truly,
June 17th, 1882. M.D.

A CENTENARIAN.

MR. T. D. HARRIES, F.R.C.S., of Aberystwith, encloses a photograph of Margaret Morris, of Taliesin, Cardiganshire, who was born at Borth on September 16th, 1776, and who is consequently in her 106th year. She is enjoying perfect health. Her residence is within ten miles of Aberystwith, and Mr. Harries has carefully investigated the case and obtained authentic evidence as to the correctness of the date of birth. The old lady is still in possession of all her senses.

VIVISECTION: WANTED A WORD INSTEAD OF IT.

To the Editor of THE LANCET.

SIR,—I greatly dislike the word vivisection, because it is inaccurate, misleading, and untruthful. Even the respected Judge Coleridge calls it inaccurate. He says (*Fortnightly Review*, Feb. 1st, page 226), "I do not hesitate to support the absolute prohibition of what, for shortness' sake, though with some verbal inaccuracy, I shall call, as others call it, vivisection.'" I am surprised that a man of the intelligence of a judge should wish to suppress truth, or, what amounts to the same thing, to prohibit one of the best known means of obtaining it. It is said to be the very best by those most capable of knowing.

Vivisecting means cutting into a living thing, but budding, grafting, pruning, vaccinating, gelding, cutting and wounding, shooting, eating a fox alive by a pack of hounds, killing rats and mice, &c., are not called vivisecting, and in vivisecting cutting forms only a very small part, at least I suppose so, for although I have been in the profession nearly forty years I have never seen vivisection. Sir William (then Dr.) Gull was our lecturer on physiology.

Many experiments do not require cutting or pain. Vivisection calls up inaccurate ideas not supported by facts. I wish my readers could suggest a word, for I do not agree with Miss Juliet that "a word is of no consequence." A word is a great power, a great influence; it should be accurate and truthful. Experimental animal research, physiological and biological research, are too vague and long in these days when we say, "Wire me."

Now, I know but little Latin, and less Greek, belonging to that class politely called by Lord Coleridge (page 231) the ordinary, coarse, rough man, the common (vulgar!) human being, and therefore I will not presume to make a great word as long as my arm (I would not if I could). I am therefore reduced to use my vulgar tongue.

The object of vivisection is to discover the laws of that mysterious thing which, for want of a better name, we call *Life*. The science which treats of life might be called life-lore (I am sick of ologies), and the mechanical art or handicraft by which we obtain the knowledge of the laws of life might be called life-lore craft. The word may look rough (remember I am a coarse, rough man), but it is not a foreign one, nor is it misleading. It is large enough to embrace experiments on the germination of a raspberry-seed, from the stomach of a mummy, to the cure of epilepsy or of insanity by operations. I should like to say more, but I fear I have occupied already too much of your valuable space.

I remain, Sir, yours truly,
Watford, June, 1882. ALFRED T. BRETT.

Mr. Gwynne (Blaenavon).—We cannot give the particulars required.

A. H. (Birmingham).—The election of Fellows will take place on the 6th proximo; voting by proxy is not allowed. At the last election upwards of 300 recorded their votes, 93 of whom were provincial Fellows.

"OVER-DISTENDED BLADDER."

To the Editor of THE LANCET.

SIR,—It is perhaps well that unusual cases should be recorded. That of Mr. R. Fraser Woodcock's, in last week's number, may justly be considered one, as four quarts of urine is far beyond the usual quantity drawn off at one operation, but not "the largest amount of urine drawn off at one time on record." There are several cases on record of a larger quantity. If Mr. Fraser Woodcock looks into Chelius' Surgery, vol. ii., page 140, he may see a case recorded in which seven quarts were drawn off. A few years since I drew nine pints, full measure, from a woman's bladder in a case of retroversion of the uterus; the patient, "three months' gone," went on to her full period of gestation.

I am, Sir, your obedient servant,
Hitchin, June 19th, 1882. OSWALD FOSTER.

Sewer.—The ventilating chamber is in fact a tank at some little distance from the house, into which the house-drain empties itself. The water in the chamber acts as a trap to the main-sewer pipe. Any regurgitation of sewer-gas from the main-sewer pipe simply pollutes the atmosphere of the chamber, which is amply ventilated by a tall shaft or pipe.

INORDINATE THIRST.

To the Editor of THE LANCET.

SIR,—I have a curious case that perplexes me. Will any of my medical brothers give me a hint as to cure? I have gone into general treatment with no result. The case is simply this:—"H. F. B——, aged not quite four years, has been suffering for about sixteen months with inordinate thirst. The quantity of fluid passed has been from two to three quarts daily; appetite bad; rest various; otherwise he seems to enjoy life, but soon becomes tired, and decreases in flesh. The specific gravity of the urine 1002." I shall be thankful if any of our medical friends can give me a hint.—I am, Sir, yours truly,
June 17th, 1882. JOHN HIND, L.R.C.P. Ed.

CASE OF CONJOINED TWINS.

To the Editor of THE LANCET.

SIR,—My assistant (Mr. Stone) was called to Mrs. R——, aged twenty, who was in labour with her second child, at 4.30 A.M., Feb. 17th, 1880. He found the os dilated to the size of half-a-crown, and the pains fairly strong; but little progress was made. At 9.45 A.M. he was again called, and found the os dilated, but the head no lower. At 10.45 A.M. he applied the long forceps, but was unable to bring down the head. At 12.30 P.M., in my absence from home, he asked Mr. Blackburn to see the case with him. Mr. Blackburn turned and delivered a stillborn monstrosity. The twins were not at term, of small size, females, and looking face to face, their bodies being confluent from the neck downwards as far as the single umbilicus in the centre; one cord, and one placenta. The head of the first child and the right hand of the second presented together. The second head was larger, tilted backwards out of reach, and had a particularly short neck. The mother made a rapid recovery. No post-mortem examination was allowed on the monstrosity.

I am, Sir, your obedient servant,

Barnsley, June, 1882. J. FLETCHER HORNE, F.R.C.S. Ed.

COMMUNICATIONS, LETTERS, &c., have been received from—Professor Yeo, London; Lord Abinger; Mr. H. C. Burdett, London; Mr. Shirley Murphy, London; Dr. Orange, Broadmoor; Mr. Haines, Long Sutton; Dr. J. L. Gibson, Edinburgh; Mr. Hind, South Molton; Mr. Dyer, Brighton; Messrs. Griffin and Co., London; Dr. Cobbold, London; Dr. W. Fraser; Mr. Gwynne, Blaenavon; Mr. Fenwick, Kingston, Canada; Dr. Gabbett, London; Mr. Powell, Nottingham; Dr. King, London; Mr. Chappé, London; Dr. Sydney, Hounslow; Dr. M'Vail, Kilmarnock; Mr. Reade, Belfast; Mr. Mallins, Walton; Mr. Bell, Edinburgh; Mr. Knight; Mr. Foster, Hitchin; Mr. Bryce, Ontario; Mr. Britton, Adelaide; Mr. Byfield, Barnet; Messrs. Wood and Co., New York; Dr. Morelli, Naples; Miss Osborn, Trow; Mr. Wright, Paddington; Dr. T. Anderson, York; Mr. Hodges; Mr. O. T. Duke, Clapham; Dr. Irwin, Liverpool; Dr. Herman, London; Mr. Wood, London; Mr. Thos. Jones, Manchester; Dr. Tuckwell, Oxford; Dr. Elder, Nottingham; Dr. Hume, Newcastle; Mr. Leisterchofen, Homburg; Mr. Wheeler, Manchester; Mr. Gooday; Mr. Unsworth, Liverpool; Mr. Johnson, London; Dr. Sturges, London; Mr. Nugent, Woodbridge; Dr. Kirkpatrick, York; Mr. Bolton, Dover; Dr. Alford, Taunton; Mr. Thuresson, London; Mr. F. Jones; Dr. Geo. Weldon, London; Mr. Cooney, London; Mr. Long, Brighton; Dr. Davies, Sherborne; N. D. F.; An Undergraduate in Medicine; An Irishman; M.D.; J. P. H.; A Senior Student; Enquirens; Surgeon; J. P.; P. P.; Clericus; &c., &c.

LETTERS, *each with enclosure*, are also acknowledged from—Mr. Lynch, London; Mr. Eddowes, Shrewsbury; Mr. Rouch, St. Leonards-on-Sea; Dr. Marson, Sydney, N.S. Wales; Mr. Bastin, Manchester; Mr. Allen, Belper; Mr. Adams, London; Miss Osborne, Worcester; Mr. Cooke, Hackney; Mr. Pace, Newcastle-on-Tyne; Mr. Taylor, Stamford-hill; Mr. Williams, Bath; Mr. Reynolds, Steeple Bumsted; Messrs. Christy and Co., London; Dr. Woolby, Bristol; Mr. F. A. White, London; Mr. Winter, London; Mr. Wright; Mr. Poole, Dublin; P. P., Chard; W. H., Borrisokave; W. H.; A. B., Manchester; O. P. J., Anthropos; Medicus, Darlington; H. W., Clifton; Sponsor; D. P. Q. R.; Beta, Brigg; H. J., Totnes; Medicus, Leicester; Vendor; Ixaus; S. F., Nottingham; Medicus, Gloucester; A. Z.; Medical Assistant; W. B.; Omicron, Callington; L. B.; Max; Veritas; Gamma; Graduate; J. E. J., Treorchy; Principal, Seaford; Dentist, Hammersmith; C. H. M., Poplar; Alpha, Nottingham; M.D., Cromer; E. M. J.; S. C., Manchester; Zero; M.D., Sheffield; Medicus, Mile-end; C. B., Gloucester; M.D., Finsbury; Excelsior; W. S., Camden-town; P. C., Liverpool; G. H. H., Huddersfield; X. K. S.; E. E. J., Manchester; R. M., Birmingham; &c., &c.

Newcastle Daily Chronicle, Sunderland Daily Echo, Era, Port Elizabeth Telegraph, West Sussex Gazette, Glasgow News, Western Morning News, &c., have been received.

Medical Diary for the ensuing Week.

Monday, June 26.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10½ A.M. each day, and at the same hour.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1½ P.M. each day, and at the same hour.

METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.

ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.

ST. MARK'S HOSPITAL.—Operations, 2 P.M.; on Tuesday, 9 A.M.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—4 P.M. Mr. Frederic S. Eve, "On the Etiology of Tumours."

Tuesday, June 27.

GUY'S HOSPITAL.—Operations, 1½ P.M., and on Friday at the same hour.

WESTMINSTER HOSPITAL.—Operations, 2 P.M.

WEST LONDON HOSPITAL.—Operations, 3 P.M.

ANTHROPOLOGICAL INSTITUTE OF GREAT BRITAIN AND IRELAND.—8 P.M. Mr. Villiers Stuart, "Note on some Egyptian Antiquities."—Dr. Becher, "On some Mexican Terra-Cotta Figures."—Mr. E. H. Man, "On the Aboriginal Inhabitants of the Andaman Islands."

Wednesday, June 28.

NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 10 A.M.

MIDDLESEX HOSPITAL.—Operations, 1 P.M.

ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1½ P.M., and on Saturday at the same hour.

ST. THOMAS'S HOSPITAL.—Operations, 1½ P.M., and on Saturday at the same hour.

ST. MARY'S HOSPITAL.—Operations, 1½ P.M.

LONDON HOSPITAL.—Operations, 2 P.M., and on Thursday and Saturday at the same hour.

GREAT NORTHERN HOSPITAL.—Operations, 2 P.M.

SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2½ P.M.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M., and on Saturday at the same hour.—Skin Department: 1.45 P.M., and on Saturday at 9.15 A.M.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—4 P.M. Mr. Frederic S. Eve, "On the Etiology of Tumours."

Thursday, June 29.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M.

ST. BARTHOLOMEW'S HOSPITAL.—1½ P.M. Surgical Consultations.

CHARING-CROSS HOSPITAL.—Operations, 2 P.M.

CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and on Friday at the same hour.

HOSPITAL FOR WOMEN, SOHO-SQUARE.—Operations, 2 P.M.

NORTH-WEST LONDON HOSPITAL.—Operations, 2½ P.M.

Friday, June 30.

ST. GEORGE'S HOSPITAL.—Ophthalmic Operations, 1½ P.M.

ST. THOMAS'S HOSPITAL.—Ophthalmic Operations, 2 P.M.

ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.

KING'S COLLEGE HOSPITAL.—Operations, 2 P.M.

Saturday, July 1.

ROYAL FREE HOSPITAL.—Operations, 2 P.M.

SUBSCRIPTION.

POST FREE TO ANY PART OF THE UNITED KINGDOM.

One Year.....£1 12 6 | Six Months £0 16 3

TO CHINA AND INDIA ..... One Year, 1 16 10

TO THE COLONIES AND UNITED STATES.. Ditto, 1 14 8

Post Office Orders should be addressed to JOHN CROFT, THE LANCET Office, 423, Strand, London, and made payable at the Post Office, Charing-cross.

Notices of Births, Marriages, and Deaths are charged five shillings.

Cheques to be crossed "London and Westminster Bank."

ADVERTISING.

Books and Publications	£0 5 0
Official and General Announcements	0 5 0
Trade and Miscellaneous Advertisements	0 4 6
Seven lines and under (each averaging ten words).	
Every additional Line	0 0 6
Front Page	per Line 0 1 0
Quarter Page	1 10 0
Half a Page	2 15 0
An entire Page	5 5 0

The Publisher cannot hold himself responsible for the return of testimonials, &c., sent to the office in reply to advertisements; copies only should be forwarded.

NOTICE.—Advertisers are requested to observe that it is contrary to the Postal Regulations to receive at Post-offices letters addressed to initials only.

An original and novel feature of "THE LANCET General Advertiser" is a special Index to Advertisements on page 2, which not only affords a ready means of finding any notice, but is in itself an *additional* advertisement.

Advertisements (to ensure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to Advertisements appearing in THE LANCET.

Terms for Serial Insertions may be obtained of the Publisher, to whom all letters relating to Advertisements or Subscriptions should be addressed.

Advertisements are now received at all Messrs. W. H. Smith and Sons' Railway Bookstalls throughout the United Kingdom, and all other Advertising Agents.

Tables of Contents, with the Index of Advertisements, for each Number can be had on application to the Publisher.

Agent for the Advertising Department in France—J. ASTIER, 67, Rue Caumartin, Paris.